COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

Application of Water Service Corporation of Kentucky for an Adjustment of Rates	)))	Case No. 2005-00325

Attorney General Response 5d

Volume II

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF UNITED WATER IDAHO INC. FOR AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WATER SERVICE IN THE STATE OF IDAHO	**Case No. UWI-W-04-04**

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

DIRECT TESTIMONY OF PAULINE M. AHERN

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Appendix A to the Direct Testimony of Pauline M. Ahern

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. Please summarize your educational background and professional experience.

A. I am a graduate of Clark University, Worcester, MA, where I received a Bachelor of Arts degree with honors in Economics in 1973. In 1991, I received a Master of Business Administration with high honors from Rutgers University.

In June 1988, I joined AUS Consultants - Utility Services as a Financial Analyst and am now a Vice President. I am responsible for the preparation of all fair rate of return and capital structure exhibits for AUS Consultants - Utility Services. I have offered expert testimony on behalf of investor-owned utilities before nineteen state regulatory commissions. The details of these appearances, as well as details of my educational background, are shown in Appendix A supplementing this testimony.

I am also the Publisher of C. A. Turner Utility Reports, responsible for the production, publication, distribution and marketing of these reports. C. A. Turner Utility Reports provides financial data and related ratios covering approximately 150 public utility companies on a monthly, quarterly, and annual

basis. Coverage includes electric, combination gas and electric, gas distribution, gas transmission, telephone, water and international utilities. The Reports are distributed to about 1,000 subscribers, which include utilities, state utility commissions, federal agencies, individuals, brokerage firms, attorneys and public and collegiate libraries.

I also calculate and maintain the A.G.A. Index under contract with the American Gas Association (A.G.A.). The A.G.A. Index is a market capitalization weighted index of the common stocks of about 70 corporate members of the A.G.A.

I have co-authored an article with Frank J. Hanley, President, AUS Consultants - Utility Services entitled "Comparable Earnings: New Life for an Old Precept" which was published in the American Gas Association's Financial Quarterly Review, Summer 1994. I also assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

I am a member of the Society of Utility and Regulatory Financial Analysts, formerly the National Society of Rate of Return Analysts, serving as Secretary/Treasurer for 2004-2006. In 1992, I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts. This designation is based upon education,

experience and the successful completion of a comprehensive written examination.

I am an associate member of the National Association of Water Companies (NAWC), serving on its Finance Committee and a member of the Energy Association of Pennsylvania, formerly the Pennsylvania Gas Association.

Q. What is the purpose of your testimony?

A. The purpose is to provide testimony on behalf of United Water Idaho, Inc. (United or the Company) as to the appropriate common equity cost rate which it should be afforded the opportunity to earn on the common equity financed portion of its jurisdictional rate base.

Q. What is your recommended common equity cost rate?

A. I recommend that the Idaho Public Utilities Commission (IPUC or the Commission) authorize the Company the opportunity to earn an overall rate of return based upon the consolidated capital structure of United Waterworks, Inc., United's parent, consisting of 55.10% long-term debt, 0.13% minority interest (preferred stock) and 44.77% common equity at cost rates of 7.10%, 5.00% and 11.20%, respectively.

Q. Have you prepared an exhibit which supports your overall recommended fair rate of return?

A. Yes, I have. It has been marked for identification as Exhibit No. 12 and consists of 11 schedules, labeled (PMA-1) through (PMA-

11). Hereinafter, references to Schedules within this testimony will be from this Exhibit, unless otherwise noted.

II. SUMMARY

Q. Please summarize your recommended common equity cost rate of 11.2%.

A. I assessed the market-based cost rates of similar risk companies, i.e., proxy groups, for insight into a recommended common equity cost rate applicable to United and suitable for cost of capital purposes. Because United's common stock is not publicly traded, market-based common equity cost rates cannot be determined directly for United. Consequently, it is appropriate to look to a proxy group or groups of similar risk companies whose common stocks are actively traded for insight into an appropriate common equity cost rate applicable to United and then adjust the results upward to reflect United's greater risk (vis-à-vis the proxy groups). Using other utilities of comparable risk as proxies is consistent with the principles of fair rate of return established in the Hope[1] and Bluefield[2] cases and adds reliability to the informed expert judgment used in arriving at a recommended common equity cost rate. Therefore, I have evaluated the market data of two proxy groups of water

[1] Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).

[2] Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679 (1922).

companies in arriving at my recommended common equity cost rate. The bases of selection are described below. One group consists of six C.A. Turner water companies, while the other group consists of the three water companies included in Value Line Investment Survey's Standard Edition (Value Line water companies).

My analysis reflects current capital market conditions and results from the application of four well-tested market-based cost of common equity models, the Discounted Cash Flow (DCF) approach, the Risk Premium Model (RPM), the Capital Asset Pricing Model (CAPM), and the Comparable Earnings Model (CEM).

The results derived from each are summarized on page 2 of Schedule (PMA-1) and are as follows:

Table 1

C.A. Turner	Proxy Group of Six Standard Edition Water Cos.	Proxy Group of Three Value Line Water Cos.
Discounted Cash Flow Model	10.8%	11.2%
Risk Premium Model	11.0	11.2
Capital Asset Pricing Model	10.5	10.8
Comparable Earnings Model	14.2	14.1
Range of Common Equity Cost Rate	10.8%	- 11.2%
Business Risk Adjustment	0.15	0.25
Range of Common Equity Cost Rate After Adjustment for Business Risk	10.95%	11.45%
Midpoint	11.2%	
Recommended Common Equity Cost Rate	11.2%	

After reviewing the cost rates based upon the four models, I conclude that a common equity cost rate range of 10.8% - 11.2% before adjustment for United's greater business risk is indicated based upon the application of all four models to both proxy groups.

As will be discussed subsequently, United is smaller than the average company in either proxy group. All else equal, small size means greater business risk. After applying business risk adjustments of 0.15% and 0.25% to the indicated common equity

cost rates based upon the much larger, less business risky proxy groups, a range of common equity cost rate of 10.95% - 11.45% is indicated. My recommended common equity cost rate is 11.2% based upon the midpoint of this range, and is applicable to the common equity financed portion of United's rate base.

III. GENERAL PRINCIPLES

Q. What general principles have you considered in arriving at your recommended common equity cost rate of 11.2%.

A. In unregulated industries, marketplace competition is the principal determinant of the price of a product or service. In the case of regulated public utilities, regulation must act as a substitute for marketplace competition. Consequently, marketplace data must be relied upon to assure that the utility can fulfill its obligations to the public and provide adequate service at all times. This requires a level of earnings sufficient to maintain the integrity of presently invested capital and permit the attraction of needed new capital at a reasonable cost in competition with other comparable-risk firms. These standards for a fair rate of return have been established by the U.S. Supreme Court in the Hope and Bluefield cases cited previously. Consequently, in my determination of a fair rate of return, I have

made every effort to also evaluate data gathered from the marketplace for water utilities similar in risk to United.

IV. BUSINESS RISK

Q. Please define business risk and explain why it is important to the determination of a fair rate of return?

A. Business risk incorporates all of the risks of a firm other than financial risk, which will be discussed subsequently. Examples of business risk include specific aspects of the operational and regulatory environment which have a direct bearing on earnings such as taxes and other cost increases, construction requirements, litigation and the potential for growth in revenue. Business risk is important to the determination of a fair rate of return because the greater the level of risk, the greater the rate of return investors demand, consistent with the basic financial precept of risk and return.

Q. Please discuss the business risks facing the water industry in general.

A. Regarding the business risks facing the water industry, Value Line Investment Survey[3] observes:

> The Safe Drinking Water Act (SDWA) of 1974 remains

[3] Value Line Investment Survey, July 30, 2004.

the authority related to the safety and purity of drinking water. Its amendment in 1996 authorized the Environmental Protection Agency EPA) to step up local compliance levels. However, the regulatory environment has only grown more onerous of late. With security measures being tightened in the wake of recent terrorist activity, governing law makers have insisted that the EPA work with local and state governments to test for impurities in drinking water and to regulate the levels of contaminants that are acceptable. And, with these standards only likely to become more stern in the years ahead, as the threat of bioterrorism against our water pipelines increases, capital budgets are likely to be increased. It is estimated that it will take hundreds of billions of dollars to renovate existing pipelines. Unfortunately, tight federal budgets are inhibiting the government from helping fund the needed improvements.

Moody's[4] also notes that:

> We expect that the credit quality of the investor-owned U.S. water utilities will likely deteriorate over the next several years, due to ongoing large capital spending requirements in the industry. Larger capital expenditures facing the water utility industry result from the following factors:
>
> - Continued federal and state environmental compliance requirements;
> - Higher capital investments for constructing modern water treatment and filtration facilities;
> - Ongoing improvement of maturing distribution and delivery infrastructure; and
> - Heightened security measures for emergency preparedness designed to prevent potential terrorist acts.

Given the overwhelming importance of protecting the

[4] Moody's Investors Service, Global Credit Research, "The Water Utility Industry: Risks Rise for Last U.S. Regulated Monopoly", Special Comment, February 1998, pp. 1 and 6.

public health, the water utility industry remains regulated by the federal and state regulatory agencies. As a result of this importance, the level of state regulators' responsiveness is critical in enabling the water utilities to maintain their financial integrity. In addition, when utilities are permitted a fair rate of return and timely rate adjustments to reflect the costs of providing this essential service, they will be more able to implement the necessary safeguards to protect the public health.

In addition, because the water industry is much more capital-intensive than the electric, natural gas or telephone industries, the investment required to produce a dollar of revenue is greater. Thus, the challenge to water utilities is significant.

In addition, the water utility industry, as well as the electric and natural gas utility industries, faces the need for increased funds to finance the increasing security costs required to protect the water supply and infrastructure from potential terrorist attacks in the post-September 11, 2001 world.

In view of the foregoing, it is clear that the water utility industry's high degree of capital intensity coupled with the need for substantial infrastructure capital spending and increased anti-terrorism security spending, require regulatory support in the form of adequate and timely rate relief so water utilities will be able to successfully meet the challenges they face.

Q. Does United face additional extraordinary business risk?

A. Yes. The Company faces four specific risk factors. The first is due to the uncertainty surrounding its future supply portfolio due to water rights issues. The second is due to the substantial variations in weather conditions in Idaho. The third is due to the Company's smaller size vis-à-vis the companies in my two proxy groups. Finally, the fourth is due to the significant growth in United's customer base, necessitating significant additions to rate base.

Q. Please discuss the uncertainty surrounding United's supply portfolio.

A. The Company's supply portfolio consists of both surface water and ground water rights which are difficult and increasingly expensive to acquire or modify. The Company continually struggles to protect these rights all the time. Currently the Company is attempting to bring security to its water rights through regulatory activity, such as its Integrated Municipal Application Package (IMAP). In addition, the Snake Rive Basin Watershed Adjudication presents increased uncertainty, and hence, risk to United because of the risk of the potential loss of existing water rights in the Basin once the Adjudication process is complete. Exacerbating the risk to United's supply portfolio is

the issue of conjunctive management, whereby certain ground water rights may be deemed linked to surface water rights and therefore potentially unavailable to supply water to United under certain conditions. Consequently, the Company faces the potential of spending a significant, but uncertain amount of dollars in the near future to realign its water rights portfolio. Coupled with the significant customer growth in its service territory and United's obligation to provide water service when requested, this poses a risk to United for water supply planning purposes and hence pressures United's revenues and cash flows.

Q. Please discuss the weather conditions faced by United.

A. The Company's service territory enjoys an arid desert climate which has a significant effect upon United's revenues. The majority of its annual revenues are realized during the summer months due to customer's dependence upon United for their summer irrigation supply. Average monthly production in the summer climbs to four times that of the winter months. In addition, because the service territory receives only approximately 11-12 inches of annual precipitation, United's annual revenues are particularly sensitive to unusually cool or

wet weather in the summer. As new customers draw less water, conservation efforts become increasingly successful, and high flow fixtures in older residences are being replaced by low flow fixtures. Even without summer weather fluctuations, average winter consumption is down when compared with history and the Company expects that it will continue to decline. Nevertheless, United must continue to manage is water rights and build new rate base to meet its increasing number of customers and anticipated summer loads, furthering pressuring revenues and cash flows.

Q. Please explain why size has a bearing on business risk.

A. United's smaller size, i.e., total capital of $120.665 million at June 30, 2004 (see page 3 of Schedule (PMA-1) vis-à-vis average total capital of $502.690 million and $865.130 million in 2003 for the proxy group of six C.A. Turner water companies and proxy group of three Value Line water companies (see page 3 of Schedule (PMA-1) indicates greater relative business risk because all else equal, size has a bearing on risk.

Smaller companies are less capable of coping with significant events which affect sales, revenues and earnings. The loss of revenues from a few larger customers, or from

declining consumption due to conservation or weather, for example, would have a greater effect on a small company than on a much larger company with a larger customer base. Because United is the regulated utility to whose rate base the Commission's ultimately allowed overall cost of capital and fair rate of return will be applied, the relevant risk reflected in the cost of capital must be that of United, including the impact of its small size on common equity cost rate. Size is an important factor which affects common equity cost rate, and United is significantly smaller than the average company in the proxy group based upon total investor-provided capital as shown below:

Table 2

	2003 Total Capital ($ millions)	Times Greater than The Company	Market Capitalization(1) ($ Millions)	Times Greater than the Company
Proxy Group of Six C.A. Turner Water Companies	$502.690	4.2x	$559.824	4.6x
Proxy Group of Three Value Line Water Cos.	865.130	7.3	980.864	8.2
United Water Idaho, Inc.	119.049		121.982(2) 120.154(3)	

(1) From Schedule (PMA-1), page 3.
(2) Based upon the proxy group of six C.A. Turner water companies.
(3) Based upon the proxy group of three Value Line water companies.

I have also performed a study of the market capitalization of the proxy groups of six C.A. Turner water companies and three Value Line water companies. The results are shown on page 5 of Schedule (PMA-1) which summarizes the market capitalizations as of October 7, 2004.

United's common stock is not publicly traded. Consequently, I have assumed that if it were publicly traded, its consolidated common shares would be selling at the same market-to-book ratios as the average market-to-book ratios for the two proxy groups, or 225.8% and 222.4%, respectively (at October 7, 2004). Because all of United's capital is carried on its books as common equity, its ratemaking capital structure is based upon its parent's, United Waterworks, capital structure as shown on page 1 of Schedule (PMA-1). Therefore, I have allocated United's

total capital at June 30, 2004 by United Waterworks' common equity ratio (based upon total investor-provided capital) at June 30, 2004 as detailed in Note 4 on page 5 of Schedule (PMA-1), to arrive at an allocated common equity balance at June 30, 2004 of $54.022 million. Based upon estimated common equity of $54.022 million, United's market capitalization is estimated at $121.982 million based upon the six C.A. Turner water companies and $120.154 million based upon the three Value Line water companies as of October 7, 2004. In contrast, the market capitalizations of the average C.A. Turner water company were $559.824 million and $980.864 million on October 7, 2004, respectively, or 4.6 and 8.2 times larger than United estimated market capitalization. It is conventional wisdom, supported by actual returns over time, and a general premise contained in basic finance textbooks, that smaller companies tend to be more risky causing investors to expect greater returns as compensation for that risk.

Q. Does the financial literature affirm a relationship between size and common equity cost rate?

A. Yes. Brigham[5] states that:

> A number of researchers have observed that portfolios of small-firms have earned consistently higher average

[5] Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition, The Dryden Press, 1989, p. 623.

returns than those of large-firms stocks; this is called "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; what *the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms.* (italics added)

Q. Please discuss the risk which United faces due to the significant growth in its customer base.

A. United serves approximately 75,000 customers in the city of Boise and surrounding areas in Ada and Canyon counties. United has recently experienced significant growth in its customer base, growing at an annual rate of 2.0%-2.5% or 1,600 to 1,800 new residential customers annually. In addition, rate base will have grown more than 41% since the last rate case in 2000, from $99 million in 2000 to $140 million in 2005, due in large part to the construction of the Columbia Water Treatment Plant as well as several other projects during 2000 to 2004. Also, operating expenses, excluding depreciation and property taxes, have increased 25% from $11 million to 13.8 million. In addition, the Company's future capital plans call for an expansion in its source of supply to meet continued customer growth by implementing Aquifer Storage and Recovery (ASR),

the drilling of new wells and increasing the capacity of the Columbia Water Treatment Plant.

The uncertainty surrounding United's supply portfolio, significant variations in weather conditions and system demands, continuing growth in customer base, United's aggressive capital plan and increasing operating expenses, all contribute to the uncertainty and pressure on revenues, earnings and cash flows, which when combined with its small size create a greater business risk compared to the two proxy groups.

V. FINANCIAL RISK

Q. Please define financial risk and explain why it is important to the determination of a fair rate of return.

A. Financial risk is the additional risk created by the introduction of senior capital, i.e., debt and preferred stock, into the capital structure. In other words, the higher the proportion of senior capital in the capital structure, the higher the financial risk.

Utilities formerly were considered to have much less business risk vis-a-vis unregulated enterprises, and, as a result, a larger percentage of debt capital was acceptable to investors. In June 2004, S&P revised its utility financial guidelines and assigned new business profile scores to U.S. utility and power

companies to better reflect the relative business risk among companies in the sector. S&P's revised financial guidelines to the bond rating process for utilities can be found in Schedule (PMA-2), page 14, while pages 1 through 9 describe the utility bond rating process. As shown on page 14, S&P's revised financial guidelines to utilities establish financial target ratios for ten levels of business position/profile with "1" being considered lowest risk and "10" being highest risk.

As shown on Schedule (PMA-9), page 2, the average S&P credit ratings (issuer credit rating) and business profiles of the six C.A. Turner water companies and three Value Line water companies are A+ and "2.6" and A and "2.7", respectively.

Q. How can one measure the combined business and financial risks, i.e., investment risk of an enterprise?

A. Similar bond ratings/issue credit reflect similar combined business and financial risks, i.e., total risk. Although the specific business or financial risks may differ between companies, the same bond rating indicates that the combined risks are similar as the bond rating process reflects acknowledgment of all diversifiable business and financial risks. For example, S&P expressly states that the bond rating process encompasses a

qualitative analysis of business and financial risks (see pages 3 through 10 of Schedule (PMA-2)). There is no perfect single proxy, such as bond rating or common stock ranking, by which one can differentiate common equity risk between companies. However, the bond rating provides a useful means to compare/differentiate common equity risk between companies because it is the result of a thorough and comprehensive analysis of all diversifiable business and financial risks, i.e., investment risk.

VI. PROXY GROUPS

Q. Please explain how you chose the proxy group of six C.A. Turner water companies.

A. The basis of selection for the proxy group of six C.A. Turner water companies is that those companies meet the following criteria: 1) they are included in the Water Company Group of C.A. Turner Public Utility Reports (October 2004); 2) they have Value Line or Thomson FN/First Call consensus projected growth rates in earnings per share; and 3) they have more than 70% of their 2003 operating revenues derived from water operations. Six companies met all of these criteria.

Q. Please describe Schedule (PMA-3).

A. Schedule (PMA-3) contains comparative capitalization and financial statistics for the six C.A. Turner water companies for the years 1999 through 2003. The schedule consists of three pages. Page 1 contains a summary of the comparative data for the years 1999-2003, while page 2 contains notes relevant to page 1, as well as the basis of selection and names of the individual companies in the proxy group. Page 3 contains the capital structure ratios based upon total capital (including short-term debt) by company and on average for the years 1999-2003.

During the five-year period ending 2003, the achieved average earnings rate on book common equity for this group ranged between 8.97% in 2003, and 10.82% in 1999, and averaged 10.16%. The five-year average market/book ratio ending 2003 was 212.98%. The five-year ending 2003 average common equity ratio based upon total investor-provided capital (including short-term debt) was 43.09%, while the five-year average dividend payout ratio was 80.17%.

Funds from operations/interest coverage, excluding all AFUDC ranged between 3.10 and 3.38 times and averaged 3.26 times during the five-year period.

Q. Please explain how you chose the proxy group of three Value Line water companies.

A. The basis of selection for the proxy group of three Value Line water companies was to include those companies which are part of Value Line's (Standard Edition) Water Utility Industry Group.

Q. Please describe Schedule (PMA-4).

A. Schedule (PMA-4) contains comparative capitalization and financial statistics for the three Value Line water companies for the years 1999 through 2003. The schedule consists of three pages. Page 1 contains a summary of the comparative data for the years 1999-2003, while page 2 contains notes relevant to page 1, as well as the basis of selection and names of the individual companies in the proxy group. Page 3 contains the capital structure ratios based upon total capital (including short-term debt) by company and on average for the years 1999-2003.

During the five-year period ending 2003, the achieved average earnings rate on book common equity for this group ranged between 8.86% in 2003, and 11.37% in 2000, and averaged 10.60%. The five-year average market/book ratio ending 2003 was 219.34%. The five-year ending 2003 average common equity ratio based upon total investor-provided capital

(including short-term debt) was 43.01%, while the five-year average dividend payout ratio was 75.16%.

Funds from operations/interest coverage, excluding all AFUDC ranged between 3.40 and 3.63 times and averaged 3.54 times during the five-year period.

VII. COMMON EQUITY COST RATE MODELS

A. The Efficient Market Hypothesis (EMH)

Q. Are the cost of common equity models you use market-based models, and hence based upon the EMH?

A. Yes. The DCF model is market-based in that market prices are utilized in developing the dividend yield component of the model. The RPM is market-based in that the bond ratings and expected bond yields used in the application of the RPM reflect the market's assessment of risk. In addition, the use of betas to determine the equity risk premium also reflects the market's assessment of risk as betas are derived from regression analyses of market prices. The CAPM is market-based for many of the same reasons that the RPM is market-based i.e., the use of expected bond (Treasury bond) yields and betas. The CEM is market-based in that the process of selecting the comparable risk non-utility companies is based upon statistics which result from regression analyses of market prices. Therefore, all the cost of common equity models I utilize are market-based models,

and hence based upon the EMH.

Q. Please describe the conceptual basis of the EMH.

A. The Efficient Market Hypothesis (EMH), which is the foundation of modern investment theory, was pioneered by Eugene F. Fama[6] in 1970. An efficient market is one in which security prices reflect all relevant information all the time. This implies that prices adjust instantaneously to new information, thus reflecting the intrinsic fundamental economic value of a security.[7]

The generally-accepted "semistrong" form of the EMH asserts that all publicly available information is fully reflected in securities prices i.e., fundamental analysis cannot enable an investor to "outperform the market". This means that all perceived risks are taken into account by investors in the prices the pay for securities. Investors are aware of all publicly-available information, including bond ratings, discussions about companies by bond rating agencies and investment analysts as well as the various cost of common equity methodologies (models) discussed in the financial literature. In an attempt to emulate investor behavior, no single common equity cost rate model should be relied upon in determining a cost rate of common equity and the results of multiple cost of common equity

[6] Fama, Eugene F., "Efficient Capital Markets: A Review of Theory and Empirical Work". Journal of Finance, May 1970, pp. 383-417.

[7] Morin, Roger A., Regulatory Finance - Utilities' Cost of Capital. Public Utility Reports, Inc., Arlington, VA, 1994, p. 136.

models should be taken into account. In addition, there is substantial support in the academic literature for the need to rely upon more than one cost of common equity model in arriving at a recommended common equity cost rate.

In view of the foregoing, it is clear that investors are aware of all of the models available for use in determining a common equity cost rate. The EMH requires the assumption that, collectively, investors use them all.

B. Discounted Cash Flow Model (DCF)

1. Theoretical Basis

Q. What is the theoretical basis of the DCF model?

A. The theory of the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be determined by discounting the cash flows at the cost of capital, or the capitalization rate. DCF theory suggests that an investor buys a stock for an expected total return rate which is expected to be derived from cash flows received in the form of dividends plus appreciation in market price (the expected growth rate). Thus, the dividend yield on market price plus a growth rate equals the capitalization rate, i.e., the total return rate expected by investors.

2. Application of the DCF Model

a. Dividend Yield

Q. Please describe the dividend yield you used in your application of the DCF model.

A. The unadjusted dividend yields are based upon an average of a recent spot date (October 7, 2004) as well as an average of the three months ended September 30, 2004, respectively, which are shown on Schedule (PMA-5). The average unadjusted yield is 3.4% for the six C.A. Turner water companies and 3.3% for the three Value Line water companies.

b. Discrete Adjustment of Dividend Yield

Q. Please explain the dividend growth component shown on Schedule (PMA-5), Column 2.

A. Because dividends are paid quarterly, or periodically, as opposed to continuously (daily), an adjustment to the dividend yield must be made. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

Since the various companies in the proxy group increase their quarterly dividend at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in 1the D_1 expression, or $D_{1/2}$. This is a conservative approach which does not overstate the dividend yield which should be representative of the next twelve-month period. Therefore, the actual average dividend yields in Column 1 on

Schedule (PMA-5) have been adjusted upward to reflect one-half the growth rates shown in Column 4.

c. Selection of Growth Rates for Use in the DCF Model

Q. Please explain the basis of the growth rates for the proxy groups of six C.A. Turner water companies and three Value Line water companies which you use in your application of the DCF model.

A. Schedule (PMA-7) indicates that about 79.0% and 70.0% of the common shares of the proxy groups of six C.A. Turner water companies and three Value Line water companies, respectively are held by individuals as opposed to institutional investors. Individual investors are particularly likely to place great significance on the opinions expressed by financial information services, such as Value Line which is readily accessible in most public libraries and Thomson FN/First Call which is easily accessible via the Internet.

Forecasts by analysts, including Value Line, are typically limited to five years. Thus, it is appropriate to use five-year historical growth rates in earnings per share (EPS) and dividends per share (DPS) as well as the sum of internal and external growth in per share value (BR + SV) in conjunction with analysts' five-year projected growth in EPS and five-year projected growth in BR + SV when determining a growth rate for use in the DCF model. The historical growth rates in EPS and DPS are from Value Line or calculated in a manner similar to Value Line, while

the projected growth rates in earnings are from Value Line and Thomson FN/First Call forecasts. Thomson FN/First Call growth rate estimates are not available for DPS and internal growth, and they do not include the Value Line projections.

All of these growth rates are summarized for the companies in the proxy group on page 1, Schedule (PMA-8). Supporting growth rate data are detailed on pages 2 through 8 of Schedule (PMA-8). Pages 8 through 12 of Schedule (PMA-8) contain all of the most current Value Line Investment Survey data for the companies in the proxy groups.

Q. Please summarize the DCF model results.

A. As shown on Schedule (PMA-5), the results of the application of the DCF model are 10.8% for the proxy group of six C.A. Turner water companies and 11.2% for the proxy group of three Value Line water companies. In arriving at conclusions of indicated common equity cost rates for the proxy groups, I included only those DCF results which are greater than 200 basis points above the average prospective yield on Moody's A rated public utility bonds of 6.8%, or 8.8%, based upon Blue Chip Financial Forecasts' October 1, 2004 consensus forecast of about 50 economists of the expected yield on Aaa rated corporate bonds of 6.3% as discussed subsequently and derived in Note 3 on page 6 of Schedule (PMA-9). It is necessary to adjust the average Aaa rated corporate bond yield to be equivalent to a

Moody's A2 rated public utility bond. As detailed in Note 2 on page 1 of Schedule (PMA-9), an adjustment to the average prospective yield on Aaa rated corporate bonds of 0.5% was required. Thus, the average prospective yield on Moody's A rated public utility bonds is 6.8%.

Based upon a review of recent authorized returns on common equity (ROE) in New York vis-à-vis concurrent estimates of the forecasted average yield on A rated public utility bonds, I determined that the equity risk premium implicit in recent IPUC authorized ROEs is between approximately 335 and 361 basis points. In accordance with the EMH, investors are aware of these implicit equity risk premia and, in my opinion, would not consider returns providing an equity risk premium of only 200 basis points above the prospective average yield on A rated public utility bonds of 6.8% or 8.8%.

C. The Risk Premium Model (RPM)

1. Theoretical Basis

Q. Please describe the theoretical basis of the RPM.

A. Risk Premium theory indicates that the cost of common equity capital is greater than the prospective company-specific cost rate for long-term debt capital. In other words, the cost of common equity equals the expected cost rate for long-term debt capital plus a risk premium to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on

the corporation's assets and earnings.

Q. Have you performed RPM analyses of common equity cost rate for the proxy groups of six C.A. Turner water companies and three Value Line water companies?

A. Yes. The results of my applications of the RPM are summarized on page 1 of Schedule (PMA-9). On Line No. 3, page 1, Schedule (PMA-9), I show the average expected yield on A rated public utility bonds of 6.8%. On Line No. 4, I show the adjustments, if necessary, that need to be made to the average 6.8% expected A rated utility bond yield so that the expected yield of 6.8% in Line No. 5 is reflective of the average Moody's bond rating of A2 for the two proxy groups of water companies as shown on page 2 of Schedule (PMA-9). On Line No. 6 of page 1, my conclusions of an equity risk premia applicable to each proxy group are shown, while the total risk premium common equity cost rates are shown on Line No. 7.

2. Estimation of Expected Bond Yield

Q. Please explain the basis of the expected bond yield of 6.8% applicable to the average company in each proxy group.

A. Because the cost of common equity is prospective, a prospective yield on similarly-rated long-term debt is essential. As shown on Schedule (PMA-9), page 2, the average Moody's bond rating for both proxy groups of water companies is A2. I relied upon a consensus forecast of about 50 economists of the expected yield

on Aaa rated corporate bonds for the six calendar quarters ending with the first calendar quarter of 2006 as derived from the October 1, 2004 Blue Chip Financial Forecasts (shown on page 7 of Schedule (PMA-9). As shown on Line No. 1 of page 1 of Schedule (PMA-9), the average expected yield on Moody's Aaa rated corporate bonds is 6.3%. It is necessary to adjust that average yield to be equivalent to a Moody's A2 rated public utility bond. Consequently, an adjustment to the average prospective yield on Aaa rated corporate bonds of 0.5% was required. It is shown on Line No. 2, page 1 of Schedule (PMA-9) and explained in Note 2 at the bottom of the page. After adjustment, the expected bond yield applicable to a Moody's A rated public utility bond is 6.8% as shown on Line No. 3, page 1 of Schedule (PMA-9).

Because the average Moody's bond rating for the two proxy groups of water companies is A2, no adjustment to the 6.8% prospective yield on A rated public utility bonds is necessary. Therefore, the expected proxy group specific bond yield is 6.8%.

3. Estimation of the Equity Risk Premium

Q. Please explain the method utilized to estimate the equity risk premium.

A. I evaluated the results of two different historical equity risk premium studies, as well as Value Line's forecasted total annual market return in excess of the prospective yield on high grade

corporate bonds, as detailed on pages 5, 6 and 8 of Schedule (PMA-9). As shown on Line No. 3, page 5 of Schedule (PMA-9), the mean equity risk premia based on both of the studies are 4.2% applicable to the proxy group of six C.A. Turner water companies and 4.4% applicable to the proxy group of three Value Line water companies. These estimates are the result of an average of beta-derived historical equity risk premia and forecasted total market equity risk premia as well as the mean historical equity risk premium applicable to public utilities with bonds rated A based upon holding period returns.

The basis of the beta-derived equity risk premia applicable to the proxy group is shown on page 6 of Schedule (PMA-9). Beta-determined equity risk premia should receive substantial weight because betas are derived from the market prices of common stocks over a recent five-year period and are a meaningful measure of prospective risk relative to the market as a whole.

The total market equity risk premium utilized is 6.4% and is based upon an average of both the long-term historical and forecasted market risk premia of 6.3% and 6.4%, respectively, as shown on page 6 of Schedule (PMA-9). To derive the historical market equity risk premium, I used the most recent Ibbotson Associates' data on holding period returns for the S&P 500 Composite Index and the average annual yield on Moody's

Aaa and Aa corporate bonds covering the period 1926-2003. The use of holding period returns over a very long period of time is useful in the beta approach because it is consistent with the long-term investment horizon presumed by the DCF model. Consequently, the long-term arithmetic mean total return rates on the market as a whole of 12.4% and arithmetic mean yield (income return) on corporate bonds of 6.1% were used, as shown at Line Nos. 1 and 2 of page 6 of Schedule (PMA-9). As shown on Line No. 3 of page 6, the resultant long-term historical equity risk premium on the market as a whole is 6.3%.

I used arithmetic mean return rates and yields (income returns) because they are appropriate for cost of capital purposes because ex-post (historical) total returns and equity risk premium spreads differ in size and direction over time. The arithmetic mean provides insight into the variance and standard deviation of such returns as it captures the prospect for variance in returns, thus providing the valuable insight needed by investors to estimate future risk when making a current investment. Absent such valuable insight into the potential variance of returns, investors cannot meaningfully evaluate prospective risk.

The basis of the forecasted market equity risk premium can be found on Line Nos. 4 through 6 on page 6 of Schedule (PMA-9). It is derived from an average of the most recent 3 months

(using the months of July 2004 through August 2004) and a recent spot (October 1, 2000) median market price appreciation potentials by Value Line as explained in detail in Note 1 on page 3 of Schedule (PMA-10). The average expected price appreciation is 52% which translates to 11.04% per annum and, when added to the average (similarly calculated) dividend yield of 1.70% equates to a forecasted annual total return rate on the market as a whole of 12.74%, rounded to 12.7%. Thus, this methodology is consistent with the use of the 3-month and spot dividend yields in my application of the DCF model. To derive the forecasted total market equity risk premium of 6.4% shown on Schedule (PMA-9), page 6, Line No. 6, the October 1, 2004 forecast of about 50 economists of the expected yield on Moody's Aaa rated corporate bonds for the six calendar quarters ending with the first calendar quarter 2006 of 6.3% from Blue Chip Financial Forecasts was deducted from the Value Line total market return of 12.7%. The calculation resulted in an expected market risk premium of 6.4%.

The average of the historical and projected market equity risk premia of 6.3% and 6.4% is 6.45%, rounded to 6.4%.

On page 9 of Schedule (PMA-9), the most current Value Line betas for the companies in the two proxy groups are shown. Applying the average betas to the average market equity risk premium of 6.4% for the six C.A. Turner water companies and

the three Value Line water companies results in beta adjusted equity risk premia of 4.4% and 4.5%, respectively, as shown on Schedule (PMA-9), page 6, Line No. 9.

A mean equity risk premium of 4.2% applicable to companies with A rated public utility bonds was calculated based upon holding period returns from a study using public utilities, as shown on Line No. 2, page 5 of Schedule (PMA-9), and detailed on page 8 of the same schedule.

The equity risk premia applicable to the two proxy groups of water companies are the average of the proxy group-specific beta-derived premium and that based upon the holding period returns of public utilities with A rated bonds, as summarized on Schedule (PMA-9), page 5, i.e., 4.2% and 4.4% for the three Value Line water companies, respectively.

Q. What are the RPM calculated common equity cost rates ?

A. They are 11.0% for the six C.A. Turner water companies and 11.2% for the three Value Line water companies as shown on Schedule (PMA-9), page 1.

D. The Capital Asset Pricing Model (CAPM)

1. Theoretical Basis

Q. Please explain the theoretical basis of the CAPM.

A. CAPM theory defines risk as the covariability of a security's returns with the market's returns. This covariability is measured by beta ("β"), an index measure of an individual security's

variability relative to the market. A beta less than 1.0 indicates lower variability while a beta greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all other risk, i.e., all non-market or unsystematic risk, can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market, or systematic, risk. The CAPM presumes that investors require compensation for risks that cannot be eliminated through diversification. Systematic risks are caused by macroeconomic and other events that affect the returns on all assets. Essentially, the model is applied by adding a risk-free rate of return to a market risk premium. This market risk premium is adjusted proportionately to reflect the systematic risk of the individual security relative to the market as measured by beta. The traditional CAPM model is expressed as:

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

Where:

R_s = Return rate on the common stock

R_f = Risk-free rate of return

R_m = Return rate on the market as a whole

β = Adjusted beta (volatility of the security relative to the market as a whole)

Numerous tests of the CAPM have confirmed its validity. These tests have measured the extent to which security returns and betas are related as predicted by the CAPM. However, Morin observes that while the results support the notion that beta is related to security returns, it has been determined that the empirical Security Market Line (SML) described by the CAPM is not as steeply sloped as the predicted SML. Morin[8] states:

> With few exceptions, the empirical studies agree that ... low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $K = R_F + x\,\beta(R_M - R_F) + (1-x)\,\beta(R_M - R_F)$
>
> where x is a fraction to be determined empirically. ...the value of x that best explains the observed relationship is between 0.25 and 0.30. If x = 0.25, the equation becomes:
>
> $K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$[9]

In view of theory and practical research, I have applied both the traditional CAPM and the empirical CAPM to the companies in

[8] Id., at p. 321.

[9] Id., at pp. 335-336.

the proxy group and averaged the results.

2. Risk-Free Rate of Return

Q. Please describe your selection of a risk-free rate of return.

A. My applications of the traditional and empirical CAPM are summarized on Schedule (PMA-10), page 1. As shown on Line Nos. 1 and 4, the risk-free rate adopted for both applications is 5.5%. It is based upon the average consensus forecast of the reporting economists in the October 1, 2004 of Blue Chip Financial Forecasts as shown in Note 2, page 4, of the expected yields on long-term U.S. Treasury bonds for the six quarters ending with the first calendar quarter 2006.

Q. Why is the prospective yield on long-term U.S. Treasury Bonds appropriate for use as the risk-free rate?

A. The yield on long-term T-Bonds is almost risk-free and its term is consistent with the long-term cost of capital to public utilities measured by the yields on A rated public utility bonds, and is consistent with the long-term investment horizon inherent in utilities' common stocks. Therefore, it is consistent with the long-term investment horizon presumed in the standard DCF model employed in regulatory ratemaking.

3. Market Equity Risk Premium

Q. Please explain the estimation of the expected equity risk premium for the market.

A. After estimating investors' expected total return rate for the

market, I subtract the expected risk-free rate to arrive at an expected equity risk premium for the market, some proportion of which must be allocated to the companies in the proxy group through the use of beta. As shown on Schedule (PMA-10), page 1, Line No. 2, the proportional market equity risk premium, based on the traditional CAPM, is 4.7% for the proxy group of six C.A. Turner water companies and 5.0% for the proxy group of three Value Line water companies. Applying the empirical CAPM results in an equity risk premium of 5.3% for the six C.A. Turner water companies and 5.8% for the three Value Line water companies as shown on Line No. 5 on page 1 of Schedule (PMA-10). The total market equity risk premium utilized was 7.2% and is based upon an average of the long-term historical and projected market risk premia.

The basis of the projected median market equity risk premium is explained in detail in Note 1 on page 3 of Schedule (PMA-10). As previously discussed, it is derived from an average of the most recent 3 months (using the months of July 2004 through August 2004) and a recent spot (October 1, 2004) 3 - 5 year median total market price appreciation projections from Value Line, and the long-term historical average from Ibbotson Associates. The appreciation projections by Value Line plus average dividend yield equate to a forecasted annual total return rate on the market of 12.7%. The long-term historical

return rate of 12.4% on the market as a whole is from Ibbotson Associates' Stocks, Bonds, Bills and Inflation - Valuation Edition 2004 Yearbook. In each instance, the relevant risk-free rate was deducted from the total market return rate. For example, from the Value Line projected total market return of 12.7%, the forecasted average risk-free rate of 5.5% was deducted indicating a forecasted market risk premium of 7.2%. From the Ibbotson Associates' long-term historical total return rate of 12.4%, the long-term historical income return rate on long-term U.S. Government Securities of 5.2% was deducted indicating an historical equity risk premium of 7.2%. Thus, the average of the projected and historical total market risk premia of 7.2% and 7.2%, respectively, is 7.2%.

Q. What are the results of your applications of the traditional and empirical CAPM to the proxy group?

A. As shown on Schedule (PMA-10), Line No. 3 of page 1, the traditional CAPM cost rates are 10.2% for the proxy group of six C.A. Turner water companies and 10.5% for the proxy group of three Value Line water companies. And, as shown on Line No. 6 of page 1, the empirical CAPM cost rates are 10.8% for the proxy group of six C.A. Turner water companies and 11.1% for the three Value Line water companies. The traditional and empirical CAPM cost rates are shown individually by company on pages 2 and 3 of Schedule (PMA-10). As shown on Line No.

7, the CAPM cost rate applicable to the proxy group of six water companies is 10.5% and an 10.8% CAPM cost rate is applicable to the proxy group of three Value Line water companies based upon the traditional and empirical CAPM results.

E. Comparable Earnings Model (CEM)

1. Theoretical Basis

Q. Please describe your application of the Comparable Earnings Model and how it is used to determine common equity cost rate.

A. My applications of the CEM are summarized on Schedule (PMA-11) which consists of six pages. Pages 1 and 2 show the CEM results for the proxy group of six C.A. Turner water companies, while pages 3 and 4 show the CEM results for the proxy group of three Value Line water companies. Pages 5 and 6 contain the notes related to pages 1 through 4.

The comparable earnings approach is derived from the "corresponding risk" standard of the landmark cases of the U.S. Supreme Court. Therefore, it is consistent with the Hope doctrine that the return to the equity investor should be commensurate with returns on investments in other firms having corresponding risks.

The CEM is based upon the fundamental economic concept of opportunity cost 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. The opportunity cost 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, in this case net worth, of similar risk enterprises. Thus, it provides a direct measure of return, since it translates into practice the competitive principle upon which regulation rests. In my opinion, it is inappropriate to use the achieved returns of regulated utilities of similar risk because to do so would be circular and inconsistent with the principle of equality of risk with non-price regulated firms.

The difficulty in application of the CEM is to select a proxy group of companies which are similar in risk, but are not price regulated utilities. Consequently, the first step in determining a cost of common equity using the comparable earnings model is to choose an appropriate proxy group of non-price regulated firms which is broad-based in order to obviate any company-specific aberrations but excludes utilities.

2. Application of the CEM

Q. Please describe your application of the CEM.

A. My application of the CEM is market-based in that the selection of non-price regulated firms of comparable risk is based upon

statistics derived from the market prices paid by investors.

I have chosen proxy groups of eighty-one and ninety-nine domestic, non-price regulated firms to reflect both the systematic and unsystematic risks of each proxy group, respectively. The proxy group of eighty-one non-utility companies is listed on pages 1 and 2 of Schedule (PMA-11), while the companies in the proxy group of ninety-nine non-utility companies are listed on pages 3 and 4. The criteria used in the selection of these proxy companies were that they be domestic non-utility companies and have a meaningful rate of return on net worth, common equity or partners' capital reported in Value Line (Standard Edition) for each of the five years ended 2003, or projected for 2007-2009. Value Line betas were used as a measure of systematic risk. The residual standard error, or the standard error of the estimate from the regression equation from which each company's beta was derived, was used as a measure of each firm's specific, i.e., unsystematic risk. The residual standard error reflects the extent to which events specific to a company's operations will affect its stock price and, therefore, is a measure of diversifiable, unsystematic, company-specific risk. *In essence, companies which have similar betas and residual standard errors, have similar investment risk, i.e., the sum of systematic (market) risk as reflected by beta and unsystematic (business and financial) risk, as reflected by the residual standard error, respectively.*

Those statistics are derived from regression analyses using market prices which, under the EMH reflect all relevant risks. The application of these criteria results in a proxy group of non-price regulated firms similar in risk to the average company in the proxy group.

Using a Value Line, Inc. database dated September 16, 2004, the proxy groups of eighty-one and ninety-nine non-price regulated companies were chosen based upon ranges of unadjusted beta and residual standard error. The ranges were based upon the average standard deviations of the unadjusted beta and the average residual standard errors for the proxy groups of six C.A. Turner water companies and three Value Line water companies as explained in Notes 1 and 9 on page 5 of Schedule (PMA-11).

Once proxy groups of non-price regulated companies are selected, it is then necessary to derive returns on book common equity, net worth or partners' capital for the companies in the groups. I have measured these returns using the rate of return on net worth, common equity or partners' capital reported by Value Line (Standard Edition). It is reasonable to measure these returns over both the most recent historical five-year period as well as those projected over the ensuing five-year period, consistent with the use of historical and projected growth rates in the DCF model.

Q. What are your conclusions of CEM cost rate?

A. The CEM cost rate is 16.2% for the proxy group of six C.A. Turner water companies as shown on page 2 of Schedule (PMA-11) and 16.0% for the proxy group of three Value Line water companies as shown on page 4 of Schedule (PMA-11). Note that I have applied a test of significance (Student's t-statistic) to determine whether any of the historical or projected returns are significantly different from their respective means at the 95% confidence level. As a result, the historical and projected means of several companies have been excluded.

I have also eliminated from the total group of eighty-one and ninety-nine companies, all those rates of return which are greater than 20.0% or less than 200 basis points above the current prospective yield of 6.8% on Moody's A rated public utility bonds (see page 1 of Schedule (PMA-9)), or 8.8%. Such elimination results in an arithmetic mean return rate of 15.0% on an historical five-year basis and 13.5% on a projected five-year basis for the six C.A. Turner water companies and 14.4% and 13.6%, respectively, for the three Value Line water companies. I rely upon the midpoint of the arithmetic mean historical five-year and projected five-year rates of return of 14.2% and 14.1% for each proxy group, respectively, excluding those rates of return in excess of 20.0% or less than 8.8% as my CEM conclusion.

VIII. RECOMMENDED COMMON EQUITY COST RATE

Q. What is your recommended common equity cost rate?

A. It is 11.2%, based upon a range of common equity cost rates of 10.8% - 11.2% before business risk adjustment based upon the common equity cost rates resulting from all four cost of common equity models consistent with the EMH which logically mandates the use of multiple cost of common equity models.

In formulating the range of common equity cost rate of 10.8% - 11.2%, I reviewed the results of the application of four different cost of common equity models, namely, the DCF, RPM, CAPM, and CEM for the proxy groups. I employ all four cost of common equity models as primary tools in arriving at my recommended common equity cost rate because no single model is so inherently precise that it can be relied upon solely, to the exclusion of other theoretically sound models. As discussed above, all four models are based upon the Efficient Market Hypothesis (EMH), and therefore, have application problems associated with them. The EMH, as also previously discussed, requires the assumption that investors rely upon multiple cost of common equity models. Moreover, as demonstrated in this testimony, the prudence of using multiple cost of common equity models is supported in the financial literature. Therefore, none should be relied upon exclusively to estimate investors' required rate of return on common equity.

The results of the four cost of common equity models applied to the proxy groups of six C.A. Turner water companies and three Value Line water companies are shown on Schedule (PMA-1), page 1 and summarized below:

Table 3

	Proxy Group of Six C.A. Turner Water Cos.		Proxy Group of Three Value Line Standard Edition Water Companies
Discounted Cash Flow Model	10.8%		11.2%
Risk Premium Model	11.0		11.2
Capital Asset Pricing Model	10.5		10.8
Comparable Earnings Model	14.2		14.1
Range of Indicated Common Equity Cost Rate	10.8%	-	11.2%
Business Risk Adjustment	0.15		0.25
Range of Equity Cost Rate After Adjustment For Business Risk	10.95%	-	11.45%
Midpoint	11.2%		
Recommended Common Equity Cost Rate			11.2%

Based upon these common equity cost rate results, I conclude that a common equity cost rate range of 10.8% - 11.2% is indicated based upon the use of multiple common equity cost rate models and before any adjustment for United's greater relative business risk as shown on Line No. 5, page 1 of Schedule (PMA-1).

These cost rates are applicable to the much larger, less business risky, proxy groups. However, as discussed previously, United bears more business risk than the average proxy group company because of its small size vis-à-vis the proxy groups, and the particular risk factors affecting the Company, as previously discussed. Therefore, it is necessary to upwardly adjust the range of common equity cost rate of 10.8% - 11.2% based upon the proxy groups. Therefore, based upon United's small relative size, I have added business risk adjustments of 0.15% (15 basis points) relative to the indicated common equity cost rate of 10.8% for the six C.A. Turner water companies and 0.25% (25 basis points) relative to the indicated common equity cost rate of 11.2% for the three Value Line water companies, which are conservatively realistic. The adjustments are based upon data contained in Chapter 7 entitled, "Firm Size and Return" from Ibbotson Associates' Stocks, Bonds, Bills and Inflation-Valuation Edition 2004 Yearbook. The determinations are based on the size premia for decile portfolios of New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and NASDAQ listed companies for the 1926-2003 period and related data shown on pages 6 through 18 of Schedule (PMA-1). The average size premium for the 7th and 8th deciles, between which the proxy group of six water companies falls, and for the 6th decile in which the proxy group of three Value Line water

companies falls, have been compared to the average size premium for the 9th and 10th deciles between which United falls, if its stock were traded and sold at the October 7, 2004 average market/book ratios of 226.1% experienced by the six C.A. Turner water companies and 222.4% experienced by the three Value Line water companies. As shown on page 2 of Schedule (PMA-1), the size premium spreads between the six C.A. Turner water companies and United is 2.71% and 3.03% between the three Value Line water companies and United. Thus, 0.15% and 0.25% are extremely conservative and reasonable estimates of the magnitude of the adjustments needed to reflect the business risk differential between United and each proxy group, respectively, based upon United's increased business risk relative to that of the proxy groups due to United's small relative size, negligible customer growth and extraordinarily large expected capital expenditures over the next four years. Consequently, as shown on page 3 of Schedule (PMA-1) at Line No. 9 and Table 3 above, the indicated common equity cost rate range based upon the total proxy groups, including the business risk adjustment based upon United's greater relative business risk is 10.95% - 11.45%, with a midpoint of 11.2%, which is also my recommended common equity cost rate. In my opinion, such a cost rate is both reasonable and conservative, given United's small size and extraordinary business risk as previously

discussed.

Q. Does that conclude your direct testimony?

A. Yes.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT

AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL QUALIFICATIONS
OF
PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL EXPERIENCE

1996-Present

As a Vice President, I continue to prepare fair rate of return and cost of capital exhibits, as well as submitting testimony on same before state public utility commissions. I continue to provide assistance and support throughout the entire ratemaking litigation process.

As the Publisher of C.A. Turner Utility Reports, I am responsible for the production, publishing, and distribution of the reports. C.A. Turner Utility Reports provides financial data and related ratios for about 200 public utilities, i.e., electric, combination gas and electric, natural gas distribution, natural gas transmission, telephone, and water utilities, on a monthly, quarterly and annual basis. C.A. Turner Utility Reports has about 1,000 subscribers including utilities, many state regulatory commissions, federal agencies, individuals, brokerage firms, attorneys, as well as public and academic libraries. The publication has continuously provided financial statistics on the utility industry since 1930.

As the Publisher of C.A. Turner Utility Reports, I supervise the production, publishing, and distribution of the AGA Rate Service publications under license from the American Gas Association. I am also responsible for maintaining and calculating the performance of the AGA Index, a market capitalization weighted index of the common stocks of the approximately 90 corporate members of the AGA. In addition, I supervise the production of a quarterly survey of investor-owned water company rate case activity on behalf of the National Association of Water Companies.

1994-1996

As an Assistant Vice President, I prepared fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. These supporting exhibits include the determination of an appropriate ratemaking capital structure and the development of embedded cost rates of senior capital. The exhibits also support the determination of a recommended return on common equity through the use of various market models, such as, but not limited to, Discounted Cash Flow analysis, Capital Asset Pricing Model and Risk Premium Methodology, as well as an assessment of the risk characteristics of the client utility. I also assisted in the preparation of responses to any interrogatories received regarding such testimonies filed on behalf of client utilities. Following the filing of fair rate of return testimonies, I assisted in the evaluation of opposition testimony in order to prepare interrogatory questions, areas of cross-examination, and rebuttal testimony. I also evaluated and assisted in the preparation of briefs and exceptions following the hearing process. I have submitted testimony before state public utility commissions regarding appropriate capital structure ratios and fixed capital cost rates.

1990-1994

As a Senior Financial Analyst, I supervised two analysts in the preparation of fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. The team also assisted in the preparation of interrogatory responses.

I evaluated the final orders and decisions of various commissions to determine whether further actions are warranted and to gain insight which may assist in the preparation of future rate of return studies.

I assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

I co-authored an article with Frank J. Hanley entitled "Comparable Earnings: New Life for an Old Precept" which was published in the American Gas Association's Financial Quarterly Review, Summer 1994.

I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts (now the Society of Utility and Regulatory Financial Analysts (SURFA)). This designation is based upon education, experience and the successful completion of a comprehensive examination.

As Administrator of Financial Analysis for C. A. Turner Utility Reports, which reports financial data for over 200 utility companies and has approximately 1,000 subscribers, I oversee the preparation of this monthly publication, as well as the annual publication, Financial Statistics - Public Utilities.

1988-1990

As a Financial Analyst, I assisted in the preparation of fair rate of return studies including capital structure determination, development of senior capital cost rates, as well as the determination of an appropriate rate of return on equity. I also assisted in the preparation of interrogatory responses, interrogatory questions of the opposition, areas of cross-examination and rebuttal testimony. I also assisted in the preparation of the annual publication C.A. Turner Utility Reports - Financial Statistics -Public Utilities.

1973-1975

As a research assistant in the Research Department of the Regional Economics Division of the Federal Reserve Bank of Boston, I was involved in the development and maintenance of econometric models to simulate regional economic conditions in New England in order to study the effects of, among other things, the energy crisis of the early 1970's and property tax revaluations on the economy of New England. I was also involved in the statistical analysis and preparation of articles for the New England Economic Review. Also, I acted as assistant editor for New England Business Indicators.

1972

As a research assistant in the Office of the Assistant Secretary for International Affairs, U.S. Treasury Department, Washington, D.C., I developed and maintained econometric models which simulated the economy of the United States in order to study the results of various alternate foreign trade policies so that national trade policy could be formulated and recommended.

I am also a member of the Society of Utility and Regulatory Financial Analysts (formerly the National Society of Rate of Return Analysts).

Clients Served

I have offered expert testimony before the following commissions:

Arkansas
California
Delaware
Florida
Hawaii
Illinois
Indiana
Maine
Maryland
Michigan
Missouri
New Jersey
New York
North Carolina
Ohio
Pennsylvania
South Carolina
Virginia
Washington

I have sponsored testimony on the rate of return and capital structure effects of merger and acquisition issues for:

California-American Water Company
New Jersey-American Water Company

I have sponsored testimony on fair rate of return and related issues for:

Audubon Water Company
Carolina Pines Utilities, Inc.
Carolina Water Service, Inc.
Consumers Illinois Water Company
Consumers Maine Water Company
Consumers New Jersey Water Company
Elizabethtown Water Company
Emporium Water Company
GTE Hawaiian Telephone Inc.
Greenridge Utilities, Inc.
Long Neck Water Company
Middlesex Water Company
Missouri-American Water Company
Mt. Holly Water Company
Nero Utility Services, Inc.
New Jersey-American Water Company
Pinelands Waste Water Company
Pittsburgh Thermal
Sussex Shores Water Company
Thames Water Americas
Tidewater Utilities, Inc.
Transylvania Utilities, Inc.
Twin Lakes Utilities, Inc.
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Indiana, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Utilities, Inc. of Florida
Wellsboro Electric Company
Western Utilities, Inc.

I have sponsored testimony on capital structure and senior capital cost rates for the

following clients:

Alpena Power Company
Arkansas-Western Gas Company
Associated Natural Gas Company
PG Energy Inc.
United Water Delaware, Inc.
Washington Natural Gas Company

I have assisted in the preparation of rate of return studies on behalf of the following clients:

Algonquin Gas Transmission Company
Arkansas-Louisiana Gas Company
Arkansas Western Gas Company
Artesian Water Company
Associated Natural Gas Company
Atlantic City Electric Company
Bridgeport-Hydraulic Company
Cambridge Electric Light Company
Carolina Power & Light Company
Citizens Gas and Coke Utility
City of Vernon, CA
Columbia Gas/Gulf Transmission Cos.
Commonwealth Electric Company
Commonwealth Telephone Company
Conestoga Telephone & Telegraph Co.
Connecticut Natural Gas Corporation
Consolidated Gas Transmission Company
Consumers Power Company
CWS Systems, Inc.
Delmarva Power & Light Company
East Honolulu Community Services, Inc.
Equitable Gas Company
Equitrans, Inc.
Florida Power & Light Company
Gary Hobart Water Company
Gasco, Inc.
GTE Alaska, Inc.
GTE Arkansas, Inc.

Rate of Return Study Clients, Continued

GTE California, Inc.
GTE Florida, Inc.
GTE Hawaiian Telephone
GTE North, Inc.
GTE Northwest, Inc.
GTE Southwest, Inc.
Great Lakes Gas Transmission L.P.
Hawaiian Electric Company
Hawaiian Electric Light Company
IES Utilities Inc.
Illinois Power Company
Interstate Power Company
Iowa Electric Light and Power Company
Iowa Southern Utilities Company
Kentucky-West Virginia Gas Company
Lockhart Power Company
Middlesex Water Company
Milwaukee Metropolitan Sewer District
Mountaineer Gas Company
National Fuel Gas Distribution Corp.
National Fuel Gas Supply Corp.
Newco Waste Systems of NJ, Inc.
New Jersey-American Water Company
New Jersey Natural Gas Company
New York-American Water Company
North Carolina Natural Gas Corp.
Northumbrian Water Company
Ohio-American Water Company
Oklahoma Natural Gas Company
Orange and Rockland Utilities
Paiute Pipeline Company
PECO Energy Company
Penn-York Energy Corporation
Pennsylvania-American Water Co.
PG Energy Inc.
Philadelphia Electric Company
South Carolina Pipeline Company
Southwest Gas Corporation
Stamford Water Company
Tesoro Alaska Petroleum Company
United Telephone of New Jersey
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Jersey, Inc.
United Water New York, Inc.
United Water Pennsylvania, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Vista-United Telecommunications Corp.

Valley Energy, Inc. – PA Division
Washington Natural Gas Company
Washington Water Power Corporation
Waste Management of New Jersey –
Transfer Station A
Wellsboro Electric Company
Western Reserve Telephone Company
Western Utilities, Inc.

EDUCATION:

1973 – Clark University – B.A. – Honors in Economics
1991 – Rutgers University – M.B.A. – High Honors

PROFESSIONAL AFFILIATIONS:

Society of Utility and Regulatory Financial Analysts (serve as Secretary/Treasurer from 2004-2006)
Energy Association of Pennsylvania
National Association of Water Companies – Member of the Finance Committee

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF UNITED WATER IDAHO, INC. FOR APPROVAL OF INCREASED RATES FOR WATER SERVICE	))))	CASE NO. UWI-W-04-04

EXHIBIT 12
TO ACCOMPANY THE
DIRECT TESTIMONY OF
PAULINE M. AHERN, CRRA, VICE PRESIDENT
AUS CONSULTANTS – UTILITY SERVICES

ON BEHALF OF UNITED WATER IDAHO INC.

NOVEMBER 2004

United Water Idaho, Inc.
Table of Contents
to the Financial Supporting Schedules
of Pauline M. Ahern

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Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Exhibit Index

United Water Idaho, Inc.
Summary of Cost of Capital and Fair Rate of Return
Based upon the Consolidated Capital Structure of United Waterworks Inc.
at June 30, 2004

Type of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	55.10 %	7.10 % (1)	3.91 %
Minority Interest (Preferred Stock)	0.13	5.00 (1)	0.01
Common Equity	44.77	11.20 (2)	5.01
Total	100.00 %		8.93 %

Notes:

(1) Company-provided.

(2) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2 of this Schedule.

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United Water Idaho, Inc.
Brief Summary of Common Equity Cost Rate

No.	Principal Methods	Proxy Group of Six C A Turner Water Companies		Proxy Group of Three Value Line (Standard Edition) Water Companies
1	Discounted Cash Flow Model (DCF) (1)	10.8 %		11.2 %
2	Risk Premium Model (RPM) (2)	11.0		11.2
3	Capital Asset Pricing Model (CAPM) (3)	10.5		10.8
4	Comparable Earnings Model (CEM) (4)	14.2		14.1
5	Range of Indicated Common Equity Cost Rate Before Business Risk Adjustment	10.8 %	--	11.2 %
6	Business Risk Adjustment	0.15		0.25
7	Range of Common Equity Cost Rate After Business Risk Adjustment	10.95 %	--	11.45 %
8	Midpoint of Common Equity Cost Rate After Business Risk Adjustment	11.20%		
9	Recommended Common Equity Cost Rate	11.20%		

Notes: (1) From Schedule (PMA-5)
(2) From page 1 of Schedule (PMA-9)
(3) From page 1 of Schedule (PMA-10)
(4) From page 1 of Schedule (PMA-11)

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United Water Idaho, Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		1 Total Capitalization (incl. Short-Term Debt) for the Year 2003 (millions)	(times larger)	2 Market Capitalization on October 7, 2004 (1) (millions)	(times larger)	3 Applicable Decile of the NYSE/AMEX/ NASDAQ	4 Applicable Size Premium		5 Spread from Applicable Size Premium for (2)
1.	United Water Idaho, Inc.	$ 120.685 (3)							
	a. Based Upon the Proxy Group of Six C. A. Turner Water Companies			$ 122.144		9 - 10 (4)	4.62%	(5)	
	b. Based Upon the Proxy Group of Three Value Line (Standard Edition) Water Companies			$ 120.154		9 - 10 (4)	4.62%	(5)	
2.	Proxy Group of Six C. A. Turner Water Companies	$ 502.690 (6)	4.2 x	$ 559.824	4.6 x	7 - 8 (7)	1.91%	(8)	2.71%
3.	Proxy Group of Three Value Line (Standard Edition) Water Companies	$ 865.130 (9)	7.2 x	$ 980.864	8.2 x	6 (10)	1.59%	(11)	3.03%

See page 4 for notes.

Decile	Number of Companies	Recent Total Market Capitalization (millions)	Recent Average Market (millions)
1 - Largest	168	$7,419,636.030	$44,164.512
2	186	1,471,629.952	7,911.989
3	198	748,716.927	3,771.298
4	200	451,145.013	2,255.725
5	221	337,041.577	1,525.075
6	277	290,452.647	1,048.566
7	343	236,327.258	694.832
8	379	171,437.318	452.341
9	613	168,889.652	275.513
10 - Smallest	1724	136,028.242	78.903

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United Water Idaho, Inc..
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE

Notes:

(1) From page 5 of this Exhibit

(2) Line No. 1 – Line No. 2 and Line No. 1 – Line No. 3 of Columns 3 and 4, respectively. For example, the 2.71% in Column 5, Line No. 2 is derived as follows: 2.71% = 4.62% - 1.91%.

(3) At June 30, 2004. Company-provided

(4) With an estimated market capitalization of $122.144 million (based upon the proxy group of six C. A. Turner water companies) or $120.154 million (based upon the proxy group of three Value Line (Standard Edition) water companies), United Water Idaho, Inc. falls between the 9th and 10th deciles of the NYSE/AMEXNASDAQ which have an average market capitalization of $177.208 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Exhibit.

(5) Average size premium applicable to the 9th and 10th deciles of the NYSE/AMEXNASDAQ derived from the information shown on page 15 of this Exhibit.

(6) From page 1 of Schedule (PMA-3) of this Exhibit.

(7) With an estimated market capitalization of $559.824 million, the proxy group of six C. A. Turner water companies falls between the 7th and 8th deciles of the NYSE/AMEXNASDAQ which have an average market capitalization of $573.587 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Exhibit.

(8) Average size premium applicable to the 7th and 8th deciles of the NYSE/AMEXNASDAQ derived from the information shown on page 15 of this Exhibit.

(9) From page 1 of Schedule (PMA-4) of this Exhibit.

(10) With an estimated market capitalization of $980.864 million, the proxy group of three Value Line (Standard Edition) water companies falls in the 6th decile of the NYSE/AMEXNASDAQ which has an average market capitalization of $1,048.566 million as shown in the table on the bottom half of page 3 of this Exhibit.

(11) Size premium applicable to the 6th decile of the NYSE/AMEXNASDAQ derived from the information shown on page 15 of this Exhibit.

Source of Information: Ibbotson Associates, Stocks, Bonds, Bills and Inflation -- Valuation Edition – 2004 Yearbook, Chicago, IL, 2004

United Water Idaho, Inc.
Market Capitalization of United Water Idaho, Inc.
for the Proxy Group of Six C. A. Turner Water Companies and
the Proxy Group of Three Value Line (Standard Edition) Water Companies and

Company	1 Common Stock Shares Outstanding at June 30, 2004 (millions)	2 Book Value per Share at June 30, 2004 (1)	3 Total Common Equity at June 30, 2004 (millions)	4 Closing Stock Market Price on October 7, 2004	5 Market-to-Book Ratio at October 7, 2004 (2)	6 Market Capitalization on October 7, 2004 (3) (millions)
United Water Idaho, Inc.	NA	NA	$ 54.022 (4)	NA		
Based Upon the Proxy Group of Six C. A. Turner Water Companies					226.1 % (5)	$ 122.144 (6)
Based Upon the Proxy Group of Three Value Line (Standard Edition) Water Companies					222.4 % (7)	$ 120.154 (8)
Proxy Group of Six C. A. Turner Water Companies						
American States Water Co.	15.269	$ 14.120	$ 215.693	$ 25.140	178.0 %	$ 383.863
Aqua America, Inc.	93.008	7.267	675.847	21.710	298.7	2,019.204
Artesian Resources Corp.	3.935	13.549	53.327	26.740	197.4	105.249
California Water Services Group	18.545	15.442	283.262	29.410	190.5	539.526
Middlesex Water Company	11.309	8.203	92.765	17.550	215.2	199.604
York Water Company	6.445	6.251	40.287	17.300	276.8	111.495
Average	24.719	$ 10.805	$ 226.530	$ 22.992	226.1 %	$ 559.824
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.	15.269	$ 14.120	$ 215.693	$ 25.140	178.0 %	$ 383.863
Aqua America, Inc.	93.008	7.267	675.847	21.710	298.7	2,019.204
California Water Services Group	18.545	15.442	283.262	29.410	190.5	539.526
Average	42.207	$ 12.276	$ 391.574	$ 25.420	222.4 %	$ 980.864

NA = Not Available

Notes:
(1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 5 * Column 3.
(4) Based upon allocating United Water Idaho, Inc.'s total capital at June 30, 2004 of $120.655 million by United Waterworks, Inc.'s common equity ratio based upon total investor provided capital, i.e., excluding customer deposits, at June 30, 2004 of 44.77% as derived below. $54.022 = $120.655 * 44.77%.

United Waterworks Inc.
Consolidated Capital Structure Based upon Investor Provided Capital at June 30, 2004

Type of Capital	Amount	Ratio
Long-term Debt	$ 234,439,000	55.10%
Minority Interest (Pfd. Stock)	561,000	0.13%
Common Equity	190,469,072	44.77%
Total	$ 425,465,072	100.00%

(5) The market-to-book ratio of United Water Idaho, Inc. at October 7, 2004 is assumed to be equal to the average market-to-book ratio at October 7, 2004 of the proxy group of six C. A. Turner Water Companies.
(6) United Water Idaho, Inc.'s common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at October 7, 2004 of the proxy group of six C. A. Turner water companies, 226.1%, and United Water Idaho, Inc.'s market capitalization at October 7, 2004 would therefore have been $122.144 million. ($122.144 = $54.022 * 226.1%).
(7) The market-to-book ratio of United Water Idaho, Inc. at October 7, 2004 is assumed to be equal to the average market-to-book ratio at October 7, 2004 of the proxy group of three Value Line (Standard Edition) Water Companies.
(8) United Water Idaho, Inc.'s common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at October 7, 2004 of the proxy group of three Value Line (Standard Edition) water companies, 222.4%, and United Water Idaho, Inc.'s market capitalization at October 7, 2004 would therefore have been $120.154 million. ($120.154 = $54.022 * 222.4%).

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Data Base
Company-provided

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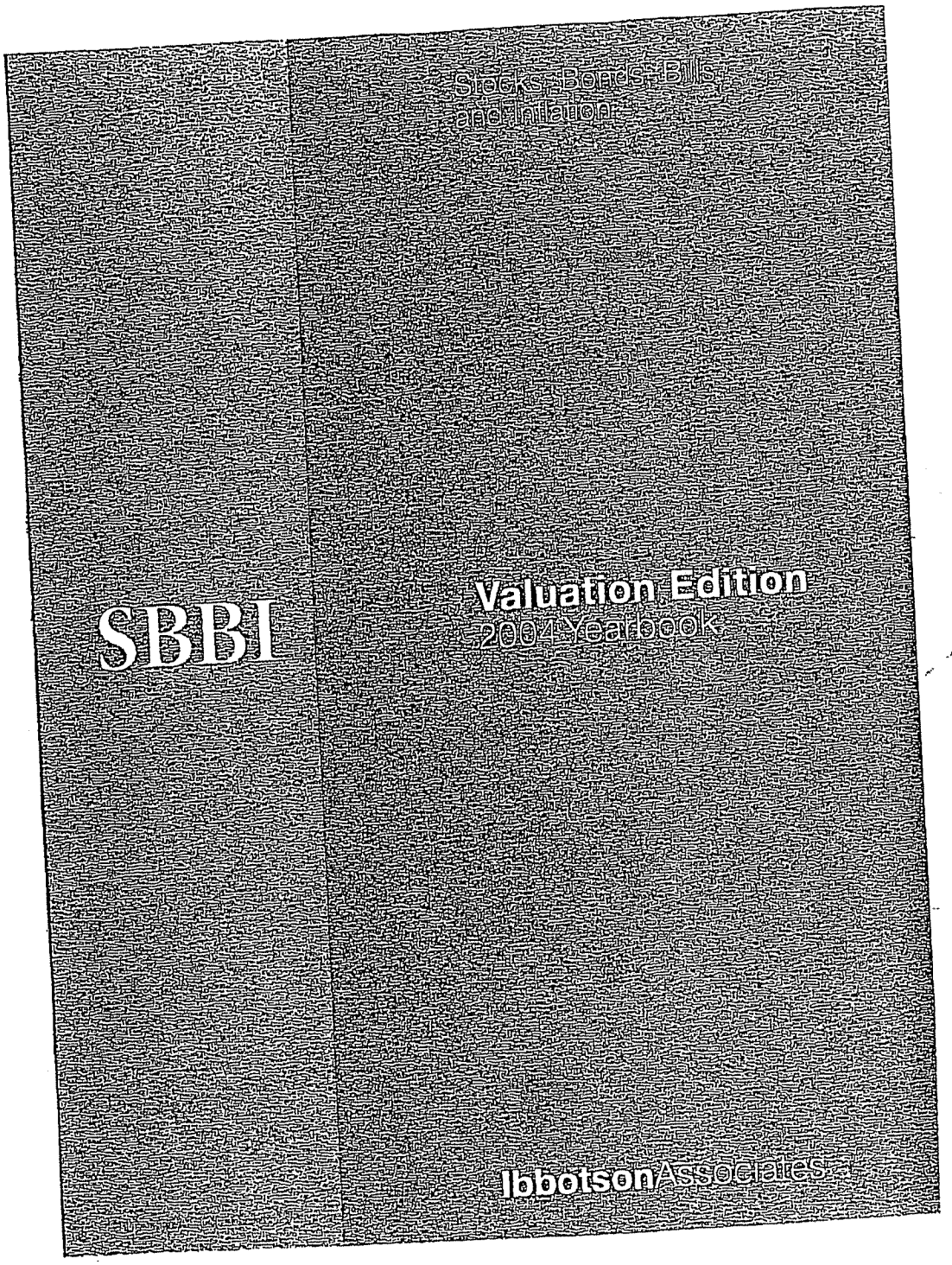

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Chapter 7

Firm Size and Return

The Firm Size Phenomenon

One of the most remarkable discoveries of modern finance is that of a relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones. Many studies have looked at the effect of firm size on return.[1] In this chapter, the returns across the entire range of firm size are examined.

Construction of the Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices (CRSP) at the University of Chicago's Graduate School of Business. CRSP has refined the methodology of creating size-based portfolios and has applied this methodology to the entire universe of NYSE/AMEX/NASDAQ-listed securities going back to 1926.

The New York Stock Exchange universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depository Receipts, unit investment trusts, and Americus Trusts. All companies on the NYSE are ranked by the combined market capitalization of their eligible equity securities. The companies are then split into 10 equally populated groups, or deciles. Eligible companies traded on the American Stock Exchange (AMEX) and the Nasdaq National Market (NASDAQ) are then assigned to the appropriate deciles according to their capitalization in relation to the NYSE breakpoints. The portfolios are rebalanced, using closing prices for the last trading day of March, June, September, and December. Securities added during the quarter are assigned to the appropriate portfolio when two consecutive month-end prices are available. If the final NYSE price of a security that becomes delisted is a month-end price, then that month's return is included in the quarterly return of the security's portfolio. When a month-end NYSE price is missing, the month-end value of the security is derived from merger terms, quotations on regional exchanges, and other sources. If a month-end value still is not determined, the last available daily price is used.

Base security returns are monthly holding period returns. All distributions are added to the month-end prices, and appropriate price adjustments are made to account for stock splits and dividends. The return on a portfolio for one month is calculated as the weighted average of the returns for its individual stocks. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

Size of the Deciles

Table 7-1 reveals that the top three deciles of the NYSE/AMEX/NASDAQ account for most of the total market value of its stocks. Approximately two-thirds of the market value is represented by the first decile, which currently consists of 168 stocks, while the smallest decile accounts for just over one percent of the market value. The data in the second column of Table 7-1 are averages across all

1 Rolf W. Banz was the first to document this phenomenon. See Banz, Rolf W. "The Relationship Between Returns and Market Value of Common Stocks," *Journal of Financial Economics*, Vol. 9, 1981, pp. 3–18.

78 years. Of course, the proportion of market value represented by the various deciles varies from year to year.

Columns three and four give recent figures on the number of companies and their market capitalization, presenting a snapshot of the structure of the deciles near the end of 2003.

Table 7-1
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Size and Composition
1926-2003

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Recent Percentage of Total Capitalization
1-Largest	53.33%	168	$7,419,538,030	64.91%
2	13.99%	186	1,471,629,852	12.87%
3	7.57%	198	746,718,927	6.53%
4	4.74%	200	451,145,013	3.95%
5	3.24%	221	337,041,577	2.95%
6	2.37%	277	290,452,647	2.54%
7	1.72%	343	238,327,256	2.08%
8	1.27%	378	171,437,318	1.50%
9	0.97%	613	168,889,652	1.48%
10-Smallest	0.80%	1,724	136,028,242	1.19%
Mid-Cap 3-5	15.55%	619	1,534,903,517	13.43%
Low-Cap 6-8	5.36%	999	700,217,223	6.13%
Micro-Cap 9-10	1.77%	2,337	304,917,894	2.67%

Source: © 200403 CRSP® Center for Research in Security Prices. Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. www.crsp.uchicago.edu

Historical average percentage of total capitalization shows the average, over the last 78 years, of the decile market values as a percentage of the total NYSE/AMEX/NASDAQ calculated each month. Number of companies in deciles, recent market capitalization of deciles, and recent percentage of total capitalization are as of September 30, 2003.

Table 7-2 gives the current breakpoints that define the composition of the NYSE/AMEX/NASDAQ size deciles. The largest company and its market capitalization are presented for each decile. Table 7-3 shows the historical breakpoints for each of the three size groupings presented throughout this chapter. Mid-cap stocks are defined here as the aggregate of deciles 3–5. Based on the most recent data (Table 7-2), companies within this mid-cap range have market capitalizations at or below $4,794,027,000 but greater than $1,166,799,000. Low-cap stocks include deciles 6–8 and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below $1,166,799,000 but greater than $330,608,000. Micro-cap stocks include deciles 9–10 and include companies with market capitalizations at or below $330,608,000. The market capitalization of the smallest company included in the micro-capitalization group is currently $332 thousand.

Table 7-2

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization by Decile
September 30, 2003

Decile	Market Capitalization of Largest Company (in thousands)	Company Name
1-Largest	$286,638,305	General Electric Co.
2	11,366,757	Masco Corp.
3	4,794,027	EOG Resources Inc.
4	2,585,984	Toys R Us Inc.
5	1,720,859	International Rectifier Corp.
6	1,166,799	Thor Industries Inc.
7	785,983	Granite Construction Inc.
8	507,820	Steelcase Inc.
9	330,808	Sterling Bancorp
10-Smallest	166,414	Ethyl Corp.

Source: Center for Research in Security Prices, University of Chicago.

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles over 1926–2003 are presented in Table 7-4. Note from this exhibit that both the average return and the total risk, or standard deviation of annual returns, tend to increase as one moves from the largest decile to the smallest. Furthermore, the serial correlations of returns are near zero for all but the smallest two deciles. Serial correlations and their significance will be discussed in detail later in this chapter.

Graph 7-1 depicts the growth of one dollar invested in each of three NYSE/AMEX/NASDAQ groups broken down into mid-cap, low-cap, and micro-cap stocks. The index value of the entire NYSE/AMEX/NASDAQ is also included. All returns presented are value-weighted based on the market capitalizations of the deciles contained in each subgroup. The sheer magnitude of the size effect in some years is noteworthy. While the largest stocks actually declined in 1977, the smallest stocks rose more than 20 percent. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and tenth decile returns was far more substantial. This divergence in the performance of small and large company stocks is a common occurrence.

Table 7-3

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1926 to1965

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1926	$81,480	$14,040	$4,305	$14,100	$4,325	$43
1927	$65,281	$14,746	$4,460	$15,311	$4,486	$72
1928	$81,998	$18,975	$5,074	$19,050	$5,119	$135
1929	$107,085	$24,328	$5,875	$24,480	$5,915	$126
1930	$57,808	$13,050	$3,219	$13,068	$3,264	$30
1931	$42,607	$8,142	$1,905	$8,222	$1,927	$15
1932	$12,431	$2,170	$473	$2,186	$477	$19
1933	$40,298	$7,210	$1,830	$7,280	$1,875	$100
1934	$38,129	$6,669	$1,669	$6,734	$1,673	$58
1935	$37,631	$6,519	$1,350	$6,549	$1,383	$38
1936	$46,920	$11,505	$2,660	$11,526	$2,868	$98
1937	$51,750	$13,601	$3,500	$13,635	$3,539	$68
1938	$36,102	$8,325	$2,125	$8,372	$2,145	$60
1939	$35,784	$7,367	$1,697	$7,389	$1,800	$75
1940	$31,050	$7,880	$1,861	$8,007	$1,872	$51
1941	$31,744	$8,316	$2,086	$8,336	$2,057	$72
1942	$25,135	$6,870	$1,779	$6,875	$1,788	$82
1943	$43,218	$11,475	$3,847	$11,480	$3,903	$385
1944	$46,621	$13,066	$4,800	$13,068	$4,812	$309
1945	$55,268	$17,325	$6,413	$17,575	$6,428	$225
1946	$79,158	$24,192	$10,013	$24,199	$10,051	$829
1947	$57,830	$17,735	$5,373	$17,872	$8,380	$747
1948	$57,238	$19,576	$7,319	$18,651	$7,329	$784
1949	$55,506	$14,549	$5,037	$14,577	$5,108	$379
1950	$65,881	$18,675	$6,176	$18,750	$6,201	$303
1951	$82,517	$22,750	$7,567	$22,860	$7,598	$668
1952	$97,835	$25,452	$8,428	$25,632	$8,480	$480
1953	$98,595	$25,374	$8,156	$25,395	$8,198	$459
1954	$125,834	$29,645	$8,464	$29,707	$8,488	$463
1955	$170,829	$41,445	$12,353	$41,681	$12,356	$553
1956	$183,434	$46,805	$13,481	$46,886	$13,524	$1,122
1957	$192,861	$47,658	$13,844	$48,509	$13,848	$925
1958	$195,083	$48,774	$13,789	$48,871	$13,816	$550
1959	$253,644	$64,221	$19,500	$64,372	$19,548	$1,804
1960	$246,202	$61,485	$19,344	$61,529	$19,385	$831
1961	$296,261	$79,058	$23,552	$79,422	$23,613	$2,455
1962	$250,433	$58,866	$18,952	$59,143	$18,968	$1,018
1963	$308,438	$71,845	$22,819	$71,971	$23,822	$296
1964	$344,033	$79,343	$25,594	$79,508	$25,595	$223
1965	$363,759	$84,479	$28,365	$84,600	$28,375	$250

Source: Center for Research in Security Prices, University of Chicago.

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Table 7-3 (continued)

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1966 to 2003

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1966	$389,455	$99,578	$34,884	$99,935	$34,986	$381
1967	$459,170	$117,985	$42,267	$118,329	$42,313	$381
1968	$528,326	$149,261	$60,351	$150,128	$60,397	$592
1969	$517,452	$144,770	$54,273	$145,684	$54,280	$2,119
1970	$380,246	$94,025	$29,910	$94,047	$29,916	$822
1971	$542,517	$145,340	$45,671	$145,673	$45,689	$865
1972	$545,211	$139,647	$46,728	$139,710	$46,757	$1,031
1973	$424,584	$94,809	$29,601	$95,378	$29,606	$561
1974	$344,013	$75,272	$22,475	$75,853	$22,481	$444
1975	$465,763	$96,954	$28,140	$97,266	$28,144	$540
1976	$551,071	$116,184	$31,987	$116,212	$32,002	$564
1977	$573,084	$135,804	$39,192	$137,323	$39,254	$519
1978	$572,967	$159,778	$46,521	$160,524	$46,629	$830
1979	$661,336	$174,480	$49,088	$174,517	$49,172	$948
1980	$754,562	$194,012	$48,671	$194,241	$48,953	$549
1981	$954,665	$259,028	$71,276	$261,059	$71,289	$1,446
1982	$762,028	$205,590	$54,675	$206,536	$54,883	$1,060
1983	$1,200,680	$352,698	$103,443	$352,944	$103,530	$2,025
1984	$1,068,972	$314,650	$90,419	$315,214	$90,659	$2,093
1985	$1,432,342	$367,413	$93,810	$368,249	$94,000	$760
1986	$1,857,621	$444,827	$109,956	$445,648	$109,975	$706
1987	$2,059,143	$467,430	$112,035	$468,948	$112,125	$1,277
1988	$1,957,926	$420,257	$94,268	$421,340	$94,302	$696
1989	$2,147,608	$480,975	$100,285	$483,823	$100,394	$95
1990	$2,164,185	$472,003	$93,627	$474,065	$93,750	$132
1991	$2,129,863	$457,958	$87,586	$458,853	$87,733	$278
1992	$2,428,671	$500,346	$103,352	$501,050	$103,500	$510
1993	$2,711,068	$608,520	$137,945	$608,825	$137,987	$602
1994	$2,497,073	$501,552	$148,435	$602,552	$148,532	$598
1995	$2,793,761	$553,178	$158,011	$654,019	$158,063	$89
1996	$3,150,685	$763,377	$195,188	$763,812	$195,326	$1,043
1997	$3,511,132	$818,299	$230,472	$821,028	$230,554	$480
1998	$4,216,707	$934,264	$253,329	$935,727	$253,336	$1,671
1999	$4,251,741	$875,309	$218,336	$875,582	$218,368	$1,502
2000	$4,143,902	$840,000	$192,598	$840,730	$192,721	$1,462
2001	$5,252,053	$1,114,792	$269,275	$1,115,200	$270,391	$443
2002	$5,012,705	$1,143,845	$314,042	$1,144,452	$314,174	$501
2003	$4,794,027	$1,166,799	$330,606	$1,167,040	$330,797	$332

Source: Center for Research in Security Prices, University of Chicago.

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Table 7-4
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Summary Statistics of Annual Returns 1926–2003

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9.6%	11.4%	19.40%	0.09
2	10.8	13.2	22.12	0.03
3	11.2	13.8	24.00	-0.02
4	11.4	14.4	26.31	-0.02
5	11.5	14.9	27.18	-0.02
6	11.7	15.3	28.12	0.03
7	11.5	15.6	30.41	0.01
8	11.7	16.8	33.90	0.04
9	12.1	17.8	37.08	0.08
10-Smallest	13.9	21.7	45.95	0.15
Mid-Cap, 3–5	11.3	14.2	25.10	-0.02
Low-Cap, 6–8	11.7	15.7	29.86	0.03
Micro-Cap, 9–10	12.7	18.0	39.65	0.09
NYSE/AMEX/NASDAQ Total Value-Weighted Index	10.1	12.1	20.46	0.03

Source: Center for Research in Security Prices, University of Chicago.

Aspects of the Firm Size Effect

The firm size phenomenon is remarkable in several ways. First, the greater risk of small stocks does not, in the context of the capital asset pricing model (CAPM), fully account for their higher returns over the long term. In the CAPM, only systematic or beta risk is rewarded; small company stocks have had returns in excess of those implied by their betas.

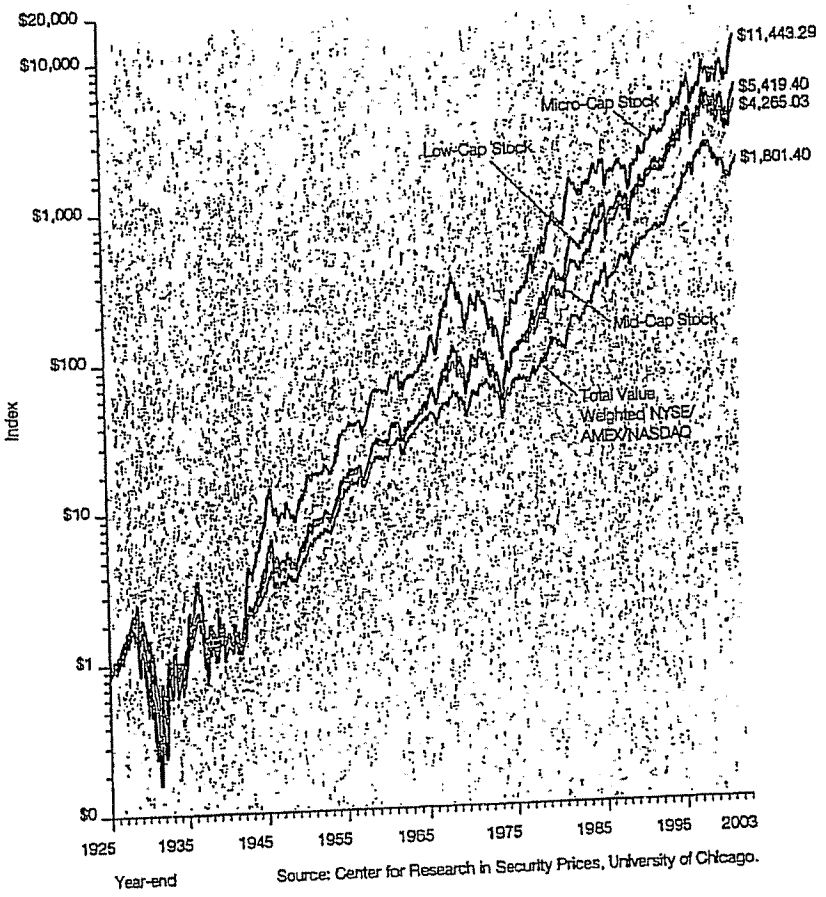
Second, the calendar annual return differences between small and large companies are serially correlated. This suggests that past annual returns may be of some value in predicting future annual returns. Such serial correlation, or autocorrelation, is practically unknown in the market for large stocks and in most other equity markets but is evident in the size premia.

Third, the firm size effect is seasonal. For example, small company stocks outperformed large company stocks in the month of January in a large majority of the years. Such predictability is surprising and suspicious in light of modern capital market theory. These three aspects of the firm size effect—long-term returns in excess of systematic risk, serial correlation, and seasonality—will be analyzed thoroughly in the following sections.

Graph 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro- and Total Capitalization Stocks
1925–2003

Year-end 1925 = $1.00



Source: Center for Research in Security Prices, University of Chicago.

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Long-Term Returns in Excess of Systematic Risk

The capital asset pricing model (CAPM) does not fully account for the higher returns of small company stocks. Table 7-5 shows the returns in excess of systematic risk over the past 78 years for each decile of the NYSE/AMEX/NASDAQ. Recall that the CAPM is expressed as follows:

$$k_s = r_f + (\beta_s \times ERP)$$

Table 7-5 uses the CAPM to estimate the return in excess of the riskless rate and compares this estimate to historical performance. According to the CAPM, the expected return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. The return in excess of the riskless rate is estimated in the context of the CAPM by multiplying the equity risk premium by β (beta). The equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (systematic risk).[2] Beta measures the extent to which a security or portfolio is exposed to systematic risk.[3] The beta of each decile indicates the degree to which the decile's return moves with that of the overall market.

A beta greater than one indicates that the security or portfolio has greater systematic risk than the market; according to the CAPM equation, investors are compensated for taking on this additional risk. Yet, Table 7-5 illustrates that the smaller deciles have had returns that are not fully explainable by their higher betas. This return in excess of that predicted by CAPM increases as one moves from the largest companies in decile 1 to the smallest in decile 10. The excess return is especially pronounced for micro-cap stocks (deciles 9–10). This size-related phenomenon has prompted a revision to the CAPM, which includes a size premium. Chapter 4 presents this modified CAPM theory and its application in more detail.

This phenomenon can also be viewed graphically, as depicted in the Graph 7-2. The security market line is based on the pure CAPM without adjustment for the size premium. Based on the risk (or beta) of a security, the expected return lies on the security market line. However, the actual historic returns for the smaller deciles of the NYSE/AMEX/NASDAQ lie above the line, indicating that these deciles have had returns in excess of that which is appropriate for their systematic risk.

2 The equity risk premium is estimated by the 78-year arithmetic mean return on large company stocks, 12.41 percent, less the 78-year arithmetic mean income-return component of 20-year government bonds as the historical riskless rate, in this case 5.23 percent. (It is appropriate, however, to match the maturity, or duration, of the riskless asset with the investment horizon.) See Chapter 5 for more detail on equity risk premium estimation.

3 Historical betas were calculated using a simple regression of the monthly portfolio (decile) total returns in excess of the 30-day U.S. Treasury bill total returns versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2003. See Chapter 6 for more detail on beta estimation.

Table 7-5

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2003

Decile	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.43%	6.21%	6.54%	-0.34%
2	1.04	13.16%	7.94%	7.44%	0.50%
3	1.10	13.78%	8.55%	7.88%	0.67%
4	1.13	14.43%	9.20%	8.09%	1.11%
5	1.16	14.81%	9.58%	8.32%	1.36%
6	1.18	15.32%	10.09%	8.50%	1.59%
7	1.23	15.65%	10.42%	8.85%	1.57%
8	1.28	16.64%	11.42%	9.16%	2.25%
9	1.34	17.76%	12.53%	9.63%	2.90%
10-Smallest	1.41	21.73%	16.50%	10.16%	6.34%
Mid-Cap, 3-5	1.12	14.16%	8.93%	8.02%	0.91%
Low-Cap, 6-8	1.22	15.67%	10.44%	8.74%	1.70%
Micro-Cap, 9-10	1.36	18.98%	13.75%	9.74%	4.01%

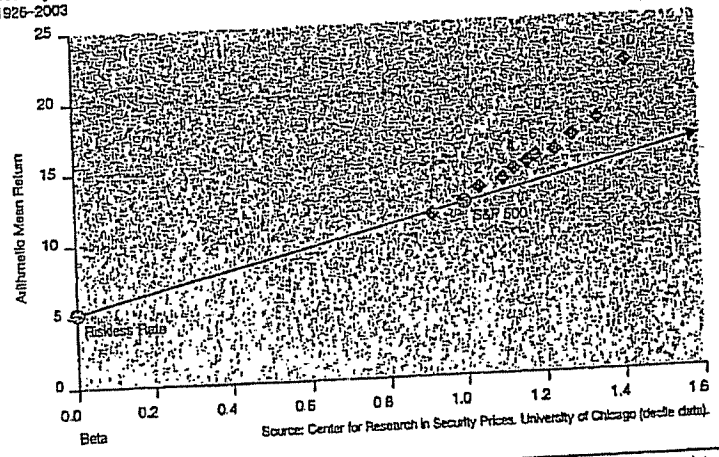
*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2003.

**Historical riskless rate is measured by the 78-year arithmetic mean income return component of 20-year government bonds (5.23 percent).

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.41 percent) minus the arithmetic mean income return component of 20-year government bonds (5.23 percent) from 1926–2003.

Graph 7-2

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2003



Source: Center for Research in Security Prices, University of Chicago (decile data).

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Further Analysis of the 10th Decile

The size premia presented thus far do a great deal to explain the return due solely to size in publicly traded companies. However, by splitting the 10th decile into two size groupings we can get a closer look at the smallest companies. This magnification of the smallest companies will demonstrate whether the company size to size premia relationship continues to hold true.

As previously discussed, the method for determining the size groupings for size premia analysis was to take the stocks traded on the NYSE and break them up into 10 deciles, after which stocks traded on the AMEX and NASDAQ were allocated into the same size groupings. This same methodology was used to split the 10th decile into two parts: 10a and 10b, with 10b being the smaller of the two. This is equivalent to breaking the stocks down into 20 size groupings, with portfolios 19 and 20 representing 10a and 10b.

Table 7-7 shows that the pattern continues; as companies get smaller their size premium increases. There is a noticeable increase in size premium from 10a to 10b, which can also be demonstrated visually in Graph 7-3. This can be useful in valuing companies that are extremely small. Table 7-6 presents the size, composition, and breakpoints of deciles 10a and 10b. First, the recent number of companies and total decile market capitalization are presented. Then the largest company and its market capitalization are presented.

Breaking the smallest decile down lowers the significance of the results compared to results for the 10th decile taken as a whole, however. The same holds true for comparing the 10th decile with the Micro-Cap aggregation of the 9th and 10th deciles. The more stocks included in a sample the more significance can be placed on the results. While this is not as much of a factor with the recent years of data, these size premia are constructed with data back to 1926. By breaking the 10th decile down into smaller components we have cut the number of stocks included in each grouping. The change over time of the number of stocks included in the 10th decile for the NYSE/AMEX/NASDAQ is presented in Table 7-8. With fewer stocks included in the analysis early on, there is a strong possibility that just a few stocks can dominate the returns for those early years.

While the number of companies included in the 10th decile for the early years of our analysis is low, it is not too low to still draw meaningful results even when broken down into subdivisions 10a and 10b. All things considered, size premia developed for deciles 10a and 10b are significant and can be used in cost of capital analysis. These size premia should greatly enhance the development of cost of capital analysis for very small companies.

Table 7-6
Size-Decile Portfolios 10a and 10b of the NYSE/AMEX/NASDAQ,
Largest Company and Its Market Capitalization
September 30, 2003

Decile	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Market Capitalization of Largest Company (in thousands)	Company Name
10a	554	$75,931,424	$166,414	Ethyl Corp.
10b	1,158	$54,867,824	$96,928	Mesa Royalty Trust

Note: These numbers may not aggregate to equal decile 10 figures.
Source: Center for Research in Security Prices, University of Chicago.

Table 7-7

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926–2003

	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.43%	6.21%	6.54%	-0.34%
2	1.04	13.16%	7.94%	7.44%	0.50%
3	1.10	13.78%	8.55%	7.88%	0.67%
4	1.13	14.43%	9.20%	8.09%	1.11%
5	1.16	14.91%	9.68%	8.32%	1.36%
6	1.18	15.32%	10.09%	8.50%	1.59%
7	1.23	15.65%	10.42%	8.85%	1.57%
8	1.28	16.64%	11.42%	9.16%	2.25%
9	1.34	17.76%	12.53%	9.63%	2.90%
10a	1.42	19.93%	14.70%	10.20%	4.50%
10b-Smallest	1.40	25.08%	19.85%	10.03%	9.82%
Mid-Cap, 3–5	1.12	14.16%	8.93%	8.02%	0.91%
Low-Cap, 6–8	1.22	15.67%	10.44%	8.74%	1.70%
Micro-Cap, 9-10	1.38	18.98%	13.75%	9.74%	4.01%

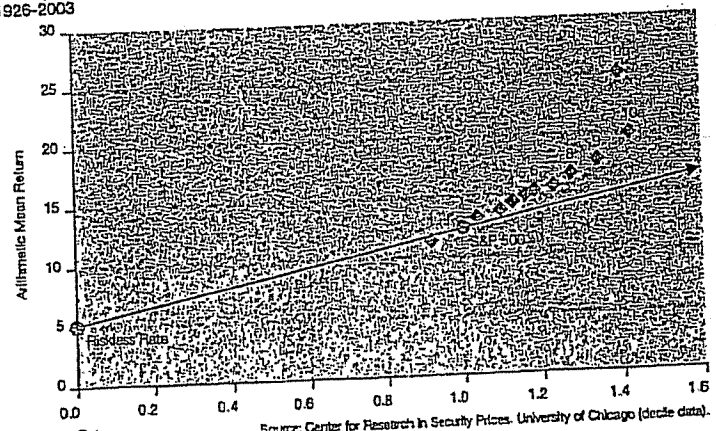
*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2003.

**Historical riskless rate is measured by the 78-year arithmetic mean income return component of 20-year government bonds (5.23 percent).

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.41 percent) minus the arithmetic mean income return component of 20-year government bonds (5.23 percent) from 1926–2003.

Graph 7-3

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926-2003



Source: Center for Research in Security Prices, University of Chicago (decile data).

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Table 7-8
Historical Number of Companies for NYSE/AMEX/NASDAQ Deciles 10

Sept.	Number of Companies
1926	52*
1930	72
1940	78
1950	100
1960	108
1970	885
1980	685
1990	1,814
2000	1,927
2003	1,724

*The fewest number of companies was 49 in March, 1926

Source: Center for Research in Security Prices, University of Chicago

Alternative Methods of Calculating the Size Premia

The size premia estimation method presented above makes several assumptions with respect to the market benchmark and the measurement of beta. The impact of these assumptions can best be examined by looking at some alternatives. In this section we will examine the impact on the size premia of using a different market benchmark for estimating the equity risk premia and beta. We will also examine the effect on the size premia study of using sum beta or an annual beta.[4]

Changing the Market Benchmark

In the original size premia study, the S&P 500 is used as the market benchmark in the calculation of the realized historical equity risk premium and of each size group's beta. The NYSE total value-weighted index is a common alternative market benchmark used to calculate beta. Table 7-9 uses this market benchmark in the calculation of beta. In order to isolate the size effect, we require an equity risk premium based on a large company stock benchmark. The NYSE deciles 1–2 large company index offers a mutually exclusive set of portfolios for the analysis of the smaller company groups: mid-cap deciles 3–5, low-cap deciles 6–8, and micro-cap deciles 9–10. The size premia analyses using these benchmarks are summarized in Table 7-9 and depicted graphically in Graph 7-4.

For the entire period analyzed, 1926–2003, the betas obtained using the NYSE total value-weighted index are higher than those obtained using the S&P 500. Since smaller companies had higher betas using the NYSE benchmark, one would expect the size premia to shrink. However, as was illustrated in Chapter 5, the equity risk premium calculated using the NYSE deciles 1–2 benchmark results in a value of 6.40, as opposed to 7.19 when using the S&P 500. The effect of the higher betas and lower equity risk premium cancel each other out, and the resulting size premia in Table 7-9 are slightly higher than those resulting from the original study.

4 Sum beta is the method of beta estimation described in Chapter 6 that was developed to better account for the lagged reaction of small stocks to market movements. The sum beta methodology was developed for the same reason that the size premia were developed; small company betas were too small to account for all of their excess returns.

Standard & Poor's Ratings Services

Standard & Poor's CORPORATE RATINGS CRITERIA

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Utilities

The utilities rating methodology encompasses two basic components: business risk analysis and financial analysis. Evaluation of industry characteristics, the utility's position within that industry, its regulation, and its management provides the context for assessing a firm's financial condition.

Historical analysis is a tool for identifying strengths and weaknesses, and provides a starting point for evaluating financial condition. Business position assessment is the qualitative measure of a utility's fundamental creditworthiness. It focuses on the forces that will shape the utilities' future.

Utilities: Credit analysis factors

Business risk	Financial risk
• Markets and service area economy	• Earnings protection
• Competitive position	• Capital structure
• Operations	• Cash flow adequacy
• Regulation	• Financial flexibility/capital attraction
• Management	
• Fuel, power, and water supply	
• Asset concentration	

The credit analysis of utilities is quickly evolving, as utilities are treated less as regulated monopolies and more as entities faced with a host of challengers in a competitive environment. Marketplace dynamics are supplanting the power of regulation, making it critically important to reduce costs and/or market new services in order to thwart competitors' inroads.

Markets and service area economy

Assessing service territory begins with the economic and demographic evaluation of the area in which the utility has its franchise. Strength of long-term demand for the product is examined from a macroeconomic perspective. This enables Standard & Poor's to evaluate the affordability of rates and the staying power of demand.

Standard & Poor's tries to discern any secular consumption trends and, more importantly, the reasons for them. Specific items examined include the size and growth rate of the market, strength of the franchise, historical and projected sales growth, income levels and trends in population, employment, and per capita income. A utility with a healthy economy and customer base—as illustrated by diverse employment opportunities, average or above-average wealth and income statistics, and low unemployment—will have a greater capacity to support its operations.

For electric and gas utilities, distribution by customer class is scrutinized to assess the depth and diversity of the utility's customer mix. For example, heavy industrial concentration is viewed cautiously, since a utility may have significant exposure to cyclical volatility. Alternatively, a large residential component yields a stable and more predictable revenue stream. The largest utility customers are identified to determine their importance to the bottom line and assess the risk of their loss and potential adverse effect on the utility's financial position. Credit concerns arise when individual customers represent more than 5% of revenues. The company or industry may play a significant role in the overall economic base of the service area. Moreover, large customers may turn to cogeneration or alternative power supplies to meet their energy needs, potentially leading to reduced cash flow for the utility (even in cases where a large customer pays discounted rates and is not a profitable account for the utility). Customer concentration is less significant for water and telecommunication utilities.

Competitive position

As competitive pressures have intensified in the utilities industry, Standard & Poor's analysis has deepened to include a more thorough review of competitive position.

Electric utility competition

For electric utilities, competitive factors examined include: percentage of firm wholesale revenues that are most vulnerable to competition; industrial load concentration; exposure of key customers to alternative suppliers; commercial concentrations; rates for various customer classes; rate design and flexibility; production costs, both marginal and fixed; the regional capacity situation; and transmission constraints. A regional focus is evident, but high costs and rates relative to national averages are also of significant concern because of the potential for electricity substitutes over time.

Mounting competition in the electric utility industry derives from excess generating capacity, lower barriers to entering the electric generating business, and marginal costs that are below embedded costs. Standard & Poor's has already witnessed declining prices in wholesale markets, as *de facto* retail competition is already being seen in several parts of the country. Standard & Poor's believes that over the coming years more and more customers will want and demand lower prices. Initial concerns focus on the largest industrial loads, but other customer classes will be increasingly vulnerable. Competition will not necessar-

fly be driven by legislation. Other pressures will arise from global competition and improving technologies, whether it be the declining cost of incremental generation or advances in transmission capacity or substitute energy sources like the fuel cell. It is impossible to say precisely when wide-open retail competition will occur; this will be evolutionary. However, significantly greater competition in retail markets is inevitable.

Gas utility competition

Similarly, gas utilities are analyzed with regard to their competitive standing in the three major areas of demand: residential, commercial, and industrial. Although regulated as holders of monopoly power, natural gas utilities have for some time been actively competing for energy market share with fuel oil, electricity, coal, solar, wood, etc. The long-term staying power of market demand for natural gas cannot be taken for granted. In fact, as the electric utility industry restructures and reduces costs, electric power will become more cost competitive and threaten certain gas markets. In addition, independent gas marketers have made greater inroads behind the city gate and are competing for large gas users. Moreover, the recent trend by state regulators to unbundle utility services is creating opportunities for outsiders to market niche products. Distributors still have the upper hand, but those who do not reduce and control costs, and thus rates, could find competition even more difficult.

Natural gas pipelines are judged to carry a somewhat higher business risk than distribution companies because they face competition in every one of their markets. To the extent a pipeline serves utilities versus industrial end users, its stability is greater. Over the next five years, pipeline competition will heat up since many service contracts with customers are expiring. Most distributor or end-use customers are looking to reduce pipeline costs and are working to improve their load factor to do so. Thus, pipelines will likely find it difficult to recontract all capacity in coming years. Being the pipeline of choice is a function of attractive transportation rates, diversity and quality of services provided, and capacity available in each particular market. In all cases though, periodic discounting of rates to retain customers will occur and put pressure on profitability.

Water utility competition

As the last true utility monopoly, water utilities face very little competition and there is currently no challenge to the continuation of franchise areas. The only exceptions have been cases where investor-owned water companies have been subject to condemnation and municipalization because of poor service or political motivations. In that regard, Standard & Poor's pays close attention to costs and rates in relation to neighboring utilities and national averages. (In contrast, the privatization of public water facilities has begun, albeit at a slower pace than anticipated. This is occurring mostly in the form of operating contracts and public/private partnerships, and not in asset transfers. This trend should continue as cities look for ways to balance their tight budgets.) Also, water utilities are not fully immune to the forces of competition: in a few instances wholesale customers can access more than one supplier.

Telephone competition

The Telecommunications Act of 1996 accelerates the continuing challenge to the local exchange companies' (LECs) century-old monopoly in the local loop. Competitive access providers (CAPs), both facilities-based and resellers, are aggressively pursuing customers, generally targeting metropolitan areas, and promising lower rates and better service.

Most long-distance calls are still originated and terminated on the local telephone company network. To complete such a call, the long-distance provider (including AT&T, MCI, Sprint and a host of smaller interexchange carriers or "IXCs") must pay the local telephone company a steep "access" fee to compensate the local phone company for the use of its local network. CAPs, in contrast, build or lease facilities that directly connect customers to their long-distance carrier, bypassing the local telephone company and avoiding access fees, and thereby can offer lower long-distance rates. But the LECs are not standing still; they are combating the loss of business to CAPs by lowering access fees, thereby reducing the economic incentive for a high usage long-distance customer to use a CAP. LECs are attempting to make up for the loss of revenues from lower access fees by increasing basic local service rates (or at least not lowering them), since basic service is far less subject to competition. LECs are improving operating efficiency and marketing high margin, value-added new services. Additionally, in the wake of the Telecommunications Act, LECs will capture at least some of the inter-LATA long-distance market. As a result of these initiatives, LECs continue to rebuild themselves—from the traditional utility monopoly to leaner, more marketing oriented organizations.

While LECs, and indeed all segments of the telecommunications sector, face increasing competition, there are favorable industry factors that tend to offset heightened business risk and augur for overall ratings stability for most LECs. Importantly, telecommunications is a declining-cost business. With increased deployment of fiber optics, the cost of transport has fallen dramatically and digital switching hardware and software have yielded more capable, trouble-free and cost-efficient networks. As a result, the cost of network maintenance has dropped sharply, as illustrated by the ratio of employees per 10,000 access lines, an oft cited measurement of efficiency. Ratios as low as 25 employees per 10,000 lines are being seen, down from the typical 40 or more employees per 10,000 ratio of only a few years ago.

In addition, networks are far more capable. They are increasingly digitally switched and able to accommodate high-speed communications. The infrastructure needed to accommodate switched broadband services will be built into telephone networks over the next few years. These advanced networks will enable telephone companies to look to a greater variety of high-margin, value-added serv-

ices. In addition to those current services such as call waiting or caller ID, the delivery of hundreds of broadcast and interactive video channels will be possible. While these services offer the potential of new revenue streams, they will simultaneously present a formidable challenge. LECs will be entering the new (to them) arena of multimedia entertainment and will have to develop expertise in marketing and entertainment programming acumen; such skills stand in sharp contrast to LECs' traditional strengths in engineering and customer service.

Operations

Standard & Poor's focuses on the nature of operations from the perspective of cost, reliability, and quality of service. Here, emphasis is placed on those areas that require management attention in terms of time or money and which, if unresolved, may lead to political, regulatory, or competitive problems.

Operations of electric utilities

For electrics, the status of utility plant investment is reviewed with regard to generating plant availability and utilization, and also for compliance with existing and contemplated environmental and other regulatory standards. The record of plant outages, equivalent availability, load factors, heat rates, and capacity factors are examined. Also important is efficiency, as defined by total megawatt hour per employee and customers per employee. Transmission interconnections are evaluated in terms of the number of utilities to which the utility in question has access, the cost structures and available generating capacity of these other utilities, and the price paid for wholesale power.

Because of mounting competition and the substantial escalation in decommissioning estimates, significant weight is given to the operation of nuclear facilities. Nuclear plants are becoming more vulnerable to high production costs that make their rates uneconomic. Significant asset concentration may expose the utility to poor performance, unscheduled outages or premature shutdowns, and large deferrals or regulatory assets that may need to be written off for the utility to remain competitive. Also, nuclear facilities tend to represent significant portions of their operators' generating capability and assets. The loss of a productive nuclear unit from both power supply and rate base can interrupt the revenue stream and create substantial additional costs for repairs and improvements and replacement power. The ability to keep these stations running smoothly and economically directly influences the ability to meet electric demand, the stability of revenues and costs, and, by extension, the ability to maintain adequate creditworthiness. Thus, economic operation, safe operation, and long-term operation are examined in depth. Specifically, emphasis is placed on operation and maintenance costs, busbar costs, fuel costs, refueling outages, forced outages, plant statistics, NRC evaluations, the potential need for repairs, operating licenses, decommissioning estimates and amounts held in external trusts, spent fuel storage capacity, and management's nuclear experience. In essence, favorable nuclear operations offer significant opportunities but, if a nuclear unit runs poorly or not at all, the attendant risks can be great.

Operations of gas utilities

For gas pipeline and distribution companies, the degree of plant utilization, the physical condition of the mains and lines, adequacy of storage to meet seasonal needs, "lost and unaccounted for" gas levels, and per-unit nongas operating and construction costs are important factors. Efficiency statistics such as load factor, operating costs per customer, and operating income per employee are also evaluated in comparison to other utilities and the industry as a whole.

Operations of water utilities

As a group, water utilities are continually upgrading their physical plant to satisfy regulations and to develop additional supply. Over the next decade, water systems will increasingly face the task of maintaining compliance, as drinking water regulations change and infrastructure ages. Given that the Safe Drinking Water Act was authorized in 1974, the first generation of treatment plants built to conform with these rules are almost 20 years old. Additionally, because the focus during this period was on satisfying environmental standards, deferred maintenance of distribution systems has been common, especially in older urban areas. The increasing cost of supplying treated water argues against the high level of unaccounted for water witnessed in the industry. Consequently, Standard & Poor's anticipates capital plans for rebuilding distribution lines and major renewal and replacement efforts aimed at treatment plants.

Operations of telephone companies

For telephone companies, cost-of-service analysis focuses on plant capability and measures of efficiency and quality of service. Plant capability is ascertained by looking at such parameters as percentage of digitally switched lines; fiber optic deployment, in particular in those portions of the plant key to network survival; and the degree of broadband capacity fiber and coaxial deployment and broadband switching capacity. Efficiency measures include operating margins, the ratio of employees per 10,000 access lines, and the extent of network and operations consolidation. Quality of service encompasses examination of quantitative measures, such as trouble reports and repeat service calls, as well as an assessment of qualitative factors, that may include service quality goals mandated by regulators.

Regulation

Regulatory rate-setting actions are reviewed on a case-by-case basis with regard to the potential effect on creditworthiness. Regulators' authorizing high rates of return is of little value unless the returns are earnable. Furthermore, allowing high returns based on noncash items does not benefit bondholders. Also, to be viewed positively, regulatory treatment should allow consistent performance from

period to period, given the importance of financial stability as a rating consideration.

The utility group meets frequently with commission and staff members, both at Standard & Poor's offices and at commission headquarters, demonstrating the importance Standard & Poor's places on the regulatory arena for credit quality evaluation. Input from these meetings and from review of rate orders and their impact weigh heavily in Standard & Poor's analysis.

Standard & Poor's does not "rate" regulatory commissions. State commissions typically regulate a number of diverse industries, and regulatory approaches to different types of companies often differ within a single regulatory jurisdiction. This makes it all but impossible to develop inclusive "ratings" for regulators.

Standard & Poor's evaluation of regulation also encompasses the administrative, judicial, and legislative processes involved in state and federal regulation. These can affect rate-setting activities and other aspects of the business, such as competitive entry, environmental and safety rules, facility siting, and securities sales.

As the utility industry faces an increasingly deregulated environment, alternatives to traditional rate-making are becoming more critical to the ability of utilities to effectively compete, maintain earnings power, and sustain creditor protection. Thus, Standard & Poor's focuses on whether regulators, both state and federal, will help or hinder utilities as they are exposed to greater competition. There is much that regulators can do, from allocating costs to more captive customers to allowing pricing flexibility—and sometimes just stepping out of the way.

Under traditional rate-making, rates and earnings are tied to the amount of invested capital and the cost of capital. This can sometimes reward companies more for justifying costs than for containing them. Moreover, most current regulatory policies do not permit utilities to be flexible when responding to competitive pressures of a deregulated market. Lack of flexible tariffs for electric utilities may lure large customers to wheel cheaper power from other sources.

In general, a regulatory jurisdiction is viewed favorably if it permits earning a return based on the ability to sustain rates at competitive levels. In addition to performance-based rewards or penalties, flexible plans could include market-based rates, price caps, index-based prices, and rates premised on the value of customer service. Such rates more closely mirror the competitive environment that utilities are confronting.

Electric industry regulation

The ability to enter into long-term arrangements at negotiated rates without having to seek regulatory approval for each contract is also important in the electric industry. (While contracting at reduced rates constrains financial performance, it lessens the potential adverse impact in the event of retail wheeling. Since revenue losses associated with this strategy are not likely to be recovered from ratepayers, utilities must control costs well enough to remain competitive if they are to sustain current levels of bondholder protection.)

Natural gas industry regulation

In the gas industry, too, several state commission policies weigh heavily in the evaluation of regulatory support. Examples include stabilization mechanisms to adjust revenues for changes in weather or the economy, rate and service unbundling decisions, revenue and cost allocation between sales and transportation customers, flexible industrial rates, and the general supportiveness of construction costs and gas purchases.

Water industry regulation

In all water utility activities, federal and state environmental regulations continue to play a critical role. The legislative timetable to effect the 1986 amendments to the Safe Drinking Water Act of 1974 was quite aggressive. But environmental standards-setting has actually slowed over the past couple of years due largely to increasing sentiment that the stringent, costly standards have not been justified on the basis of public health. A moratorium on the promulgation of significant new environmental rules is anticipated.

Telecommunications industry regulation

Despite the advances in telecommunications deregulation, analysis of regulation of telephone operators will continue to be a key rating determinant for the foreseeable future. The method of regulation may be either classic rate-based rate of return or some form of price cap mechanism. The most important factor is to assess whether the regulatory framework—no matter which type—provides sufficient financial incentive to encourage the rated company to maintain its quality of service and to upgrade its plant to accommodate new services while facing increasing competition from wireless operators and cable television companies.

Where regulators do still set tariffs based on an authorized return, Standard & Poor's strives to explore with regulators their view of the rate-of-return components that can materially impact reported versus regulatory earnings. Specifically these include the allowable base upon which the authorized return can be earned, allowable expenses, and the authorized return. Since regulatory oversight runs the gamut from strict, adversarial relationships with the regulated operating companies to highly supportive postures, Standard & Poor's probes beyond the apparent regulatory environment to ascertain the actual impact of regulation on the rated company.

Management

Evaluating the management of a utility is of paramount importance to the analytical process since management's abilities and decisions affect all areas of a company's operations. While regulation, the economy, and other outside factors can influence results, it is ultimately the quality of management that determines the success of a company.

With emerging competition, utility management will be more closely scrutinized by Standard & Poor's and will become an increasingly critical component of the credit evaluation. Management strategies can be the key determinant in differentiating utilities and in establishing where companies lie on the business position spectrum. It is imperative that managements be adaptable, aggressive, and proactive if their utilities are to be viable in the future; this is especially important for utilities that are currently uncompetitive.

The assessment of management is accomplished through meetings, conversations, and reviews of company plans. It is based on such factors as tenure, industry experience, grasp of industry issues, knowledge of customers and their needs, knowledge of competitors, accounting and financing practices, and commitment to credit quality. Management's ability and willingness to develop workable strategies to address their systems' needs, to deal with the competitive pressures of free market, to execute reasonable and effective long-term plans, and to be proactive in leading their utilities into the future are assessed. Management quality is also indicated by thoughtful balancing of public and private priorities, a record of credibility, and effective communication with the public, regulatory bodies, and the financial community. Boards of directors will receive ever more attention with respect to their role in setting appropriate management incentives.

With competition the watchword, Standard & Poor's also focuses on management's efforts to enhance financial condition. Management can bolster bondholder protection by taking any number of discretionary actions, such as selling common equity, lowering the common dividend payout, and paying down debt. Also important for the electric industry will be creativity in entering into strategic alliances and working partnerships that improve efficiency, such as central dispatching for a number of utilities or locking up at-risk customers through long-term contracts or expanded flexible pricing agreements. Proactive management teams will also seek alternatives to traditional rate-base, rate-of-return rate-making, move to adopt higher depreciation rates for generating facilities, segment customers by individual market preferences, and attempt to create superior service organizations.

In general, management's ability to respond to mounting competition and changes in the utility industry in a swift and appropriate manner will be necessary to maintain credit health.

Fuel, power, and water supply

Assessment of present and prospective fuel and power supply is critical to every electric utility analysis, while gauging the long-term natural gas supply position for gas pipeline and distribution companies and the water resources of a water utility is equally important. There is no similar analytical category for telephone utilities.

Electric utilities

For electric utilities emphasis is placed on generating reserve margins, fuel mix, fuel contract terms, demand-side management techniques, and purchased power arrangements. The adequacy of generating margins is examined nationally, regionally, and for each individual company. However, the reserve margin picture is muddied by the imprecise nature of peak-load growth forecasting, and also supply uncertainty relating to such things as Canadian capacity availability and potential plant shutdowns due to age, new NRC rules, acid rain remedies, fuel shortages, problems associated with nontraditional technologies, and so forth. Even apparently ample reserves may not be what they seem. Moreover, the quality of capacity is just as important as the size of reserves. Companies' reserve requirements differ, depending upon individual operating characteristics.

Fuel diversity provides flexibility in a changing environment. Supply disruptions and price hikes can raise rates and ignite political and regulatory pressures that ultimately lead to erosion in financial performance. Thus, the ability to alter generating sources and take advantage of lower cost fuels is viewed favorably.

Dependence on any single fuel means exposure to that fuel's problems: electric utilities that rely on oil or gas face the potential for shortages and rapid price increases; utilities that own nuclear generating facilities face escalating costs for decommissioning; and coal-fired capacity entails environmental problems stemming from concerns over acid rain and the "greenhouse effect."

Buying power from neighboring utilities, qualifying facility projects, or independent power producers may be the best choice for a utility that faces increasing electricity demand. There has been a growing reliance on purchased power arrangements as an alternative to new plant construction. This can be an important advantage, since the purchasing utility avoids potential construction cost overruns as well as risking substantial capital. Also, utilities can avoid the financial risks typical of a multiyear construction program that are caused by regulatory lag and prudence reviews. Furthermore, purchased power may enhance supply flexibility, fuel resource diversity, and maximize load factors. Utilities that plan to meet demand projections with a portfolio of supply-side options also may be better able to adapt to future growth uncertainties. Notwithstanding the benefits of purchasing, such a strategy has risks associated with it. By entering into a firm long-term purchased power contract that contains a fixed-cost component, utilities can incur substantial market, operating, regulatory, and financial risks. Moreover, regulatory treatment of purchased power removes any upside potential that might help offset the risks. Utilities are not compensated through incentive rate-making; rather, purchased power is recovered dollar-for-dollar as an operating expense.

To analyze the financial impact of purchased power, Standard & Poor's first calculates the net present value of future annual capacity payments (discounted at 10%). This represents a potential debt equivalent—the off-balance-sheet obligation that a utility incurs when it enters into a long-term purchased power contract. However, Standard

& Poor's adds to the utility's balance sheet only a portion of this amount, recognizing that such a contractual arrangement is not entirely the equivalent of debt. What percentage is added is a function of Standard & Poor's qualitative analysis of the specific contract and the extent to which market, operating, and regulatory risks are borne by the utility (the risk factor). For unconditional, take-or-pay contracts, the risk factor range is from 40%-80%, with the average hovering around 60%. A lower risk factor is typically assigned for system purchases from coal-fired utilities and a higher risk factor is usually designated for unit-specific nuclear purchases. The range for take-and-pay performance obligations is between 10%-50%.

Gas utilities

For gas distribution utilities, long-term supply adequacy obviously is critical, but the supply role has become even more important in credit analysis since the Federal Energy Regulatory Commission's Order 636 eliminated the interstate pipeline merchant business. This thrust gas supply responsibilities squarely on local gas distributors. Standard & Poor's has always believed distributor management has the expertise and wherewithal to perform the job well, but the risks are significant since gas costs are such a large percentage of total utility costs. In that regard, it is important for utilities to get preapprovals of supply plans by state regulators or at least keep the staff and commissioners well informed. To minimize risks, a well-run program would diversify gas sources among different producers or marketers, different gas basins in the U.S. and Canada, and different pipeline routes. Also, purchase contracts should be firm, with minimal take-or-pay provisions, and have prices tied to an industry index. A modest percentage of fixed-price gas is not unreasonable. Contracts, whether of gas purchases or pipeline capacity, should be intermediate term. Staggering contract expirations (preferably annually) provides an opportunity to be an active market player. A modest degree of reliance on spot purchases provides flexibility, as does the use of market-based storage. Gas storage and on-property gas resources such as liquefied natural gas or propane air are effective peak-day and peak-season supply management tools.

Since pipeline companies no longer buy and sell natural gas and are just common carriers, connections with varied reserve basins and many wells within those basins are of great importance. Diversity of sources helps offset the risks arising from the natural production declines eventually experienced by all reserve basins and individual wells. Moreover, such diversity can enhance a pipeline's attractiveness as a transporter of natural gas to distributors and end users seeking to buy the most economical gas available for their needs.

Water utilities

Nearly all water systems throughout the U.S. have ample long-term water supplies. Yet to gain comfort, Standard & Poor's assesses the production capability of treatment plants and the ability to pump water from underground aquifers in relation to the usage demands from consumers. Having adequate treated water storage facilities has become important in recent years and has helped many systems meet demands during peak summer periods. Of interest is whether the resources are owned by the utility or purchased from other utilities or local authorities. Owning properties with water rights provides more supply security. This is especially so in states like California where water allocations are being reduced, particularly since recent droughts and environmental issues have created alarm. Since the primary cost for water companies is treatment, it makes little difference whether raw water is owned or bought. In fact, compliance with federal and state water regulations is very high, and the overall cost to deliver treated water to consumers remains relatively affordable.

Asset concentration in the electric utility industry

In the electric industry, Standard & Poor's follows the operations of major generating facilities to assess if they are well managed or troubled. Significant dependence on one generating facility or a large financial investment in a single asset suggests high risk. The size or magnitude of a particular asset relative to total generation, net plant in service, and common equity is evaluated. Where substantial asset concentration exists, the financial profile of a company may experience wide swings depending on the asset's performance. Heavy asset concentration is most prevalent among utilities with costly nuclear units.

Earnings protection

In this category, pretax cash income coverage of all interest charges is the primary ratio. For this calculation, allowance for funds used during construction (AFUDC) is removed from income and interest expense. AFUDC and other such noncash items do not provide any protection for bondholders. To identify total interest expense, the analyst reclassifies certain operating expenses. The interest component of various off-balance-sheet obligations, such as leases and some purchased-power contracts, is included in interest expense. This provides the most direct indication of a utility's ability to service its debt burden.

While considerable emphasis in assessing credit protection is placed on coverage ratios, this measure does not provide the entire earnings protection picture. Also important are a company's earned returns on both equity and capital, measures that highlight a firm's earnings performance. Consideration is given to the interaction of embedded costs, financial leverage, and pretax return on capital.

Capital structure

Analyzing debt leverage goes beyond the balance sheet and covers quasi-debt items and elements of hidden financial leverage. Noncapitalized leases (including sale/leaseback obligations), debt guarantees, receivables financing, and purchased-power contracts are all considered debt equivalents and are reflected as debt in calculating capital

structure ratios. By making debt level adjustments, the analyst can compare the degree of leverage used by each utility company.

Furthermore, assets are examined to identify undervalued or overvalued items. Assets of questionable value are discounted to more accurately evaluate asset protection.

Some firms use short-term debt as a permanent piece of their capital structure. Short-term debt also is considered part of permanent capital when it is used as a bridge to permanent financing. Seasonal, self-liquidating debt is excluded from the permanent debt amount, but this situation is rare—with the exception of certain gas utilities. Given the long life of almost all utility assets, short-term debt may expose these companies to interest-rate volatility, remarketing risk, bank line backup risk, and regulatory exposure that cannot be readily offset. The lower cost of shorter-term obligations (assuming a positively sloped yield curve) is a positive factor that partially mitigates the risk of interest-rate variability. As a rule of thumb, a level of short-term debt that exceeds 10% of total capital is cause for concern.

Similarly, if floating-rate debt and preferred stock constitute over one-third of total debt plus preferred stock, this level is viewed as unusually high and may be cause for concern. It might also indicate that management is aggressive in its financial policies.

A layer of preferred stock in the capital structure is usually viewed as equity—since dividends are discretionary and the subordinated claim on assets provides a cushion for providers of debt capital. A preferred component of up to 10% is typically viewed as a permanent wedge in the capital structure of utilities. However, as rate-of-return regulation is phased out, preferred stock may be viewed by utilities—as many industrial firms would—as a temporary option for companies that are not current taxpayers that do not benefit from the tax deductibility of interest. Even now, floating-rate preferred and money market perpetual preferred are problematic; a rise in the rate due to deteriorating credit quality tends to induce a company to take out such preferred stock with debt. Structures that convey tax deductibility to preferred stock have become very popular and do generally afford such financings with equity treatment.

Cash flow adequacy

Cash flow adequacy relates to a company's ability to generate funds internally relative to its needs. It is a basic component of credit analysis because it takes cash to pay expenses, fund capital spending, pay dividends, and make interest and principal payments. Since both common and preferred dividend payments are important to maintain capital market access, Standard & Poor's looks at cash flow measures both before and after dividends are paid.

To determine cash flow adequacy, several quantitative relationships are examined. Emphasis is placed on cash flow relative to debt, debt service requirements, and capital spending. Cash flow adequacy is evaluated with respect to a firm's ability to meet all fixed charges, including capacity payments under purchased-power contracts. Despite the conditional nature of some contracts, the purchaser is obligated to pay a minimum capacity charge. The ratio used is funds from operations plus interest and capacity payments divided by interest plus capacity payments.

Financial flexibility/capital attraction

Financing flexibility incorporates a utility's financing needs, plans, and alternatives, as well as its flexibility to accomplish its financing program under stress without damaging creditworthiness. External funding capability complements internal cash flow. Especially since utilities are so capital intensive, a firm's ability to tap capital markets on an ongoing basis must be considered. Debt capacity reflects all the earlier elements: earnings protection, debt leverage, and cash flow adequacy. Market access at reasonable rates is restricted if a reasonable capital structure is not maintained and the company's financial prospects dim. The analyst also reviews indenture restrictions and the impact of additional debt on covenant tests.

Standard & Poor's assesses a company's capacity and willingness to issue common equity. This is affected by various factors, including the market-to-book ratio, dividend policy, and any regulatory restrictions regarding the composition of the capital structure.

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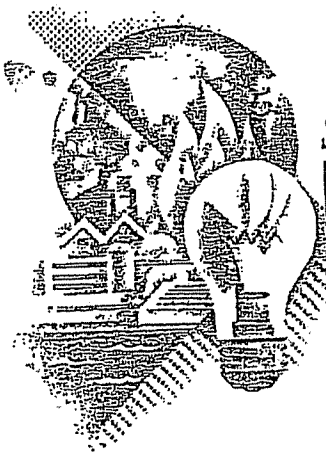

Standard & Poor's UTILITIES & PERSPECTIVES

GLOBAL UTILITIES RATING SERVICE

STANDARD &POOR'S

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
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New Business Profile Scores Assigned for U.S. Utility and Power Companies; Financial Guidelines Revised

Standard & Poor's Ratings Services has assigned new business profile scores to U.S. utility and power companies to better reflect the relative business risk among companies in the sector. Standard & Poor's also has revised its published risk-adjusted financial guidelines. The new business scores and financial guidelines do not represent a change to Standard & Poor's ratings criteria or methodology, and no ratings changes are anticipated from the new business profile scores or revised financial guidelines.

New Business Profile Scores and Revised Financial Guidelines

Standard & Poor's has always monitored changes in the industry and altered its business risk assessments accordingly. This is the first time since the 10-point business profile scale for U.S. investor-owned utilities was implemented that a comprehensive assessment of the benefits and the application of the methodology has been made. The principal purpose was to determine if the methodology continues to provide meaningful differentiation of business risk. The review indicated that while business profile scoring continues to provide analytical benefits, the complete range of the 10-point scale was not being utilized to the fullest extent.

Standard & Poor's has also revised the key financial guidelines that it uses as an integral part of evaluating the credit quality of U.S. utility and power companies. These guidelines were last updated in June 1999. The financial guidelines for three principal ratios (funds from operations (FFO) interest coverage, FFO to total debt, and total debt to total capital) have been broadened so as to be more flexible. Pretax interest cov-

Chart 1

Distribution of Business Profile Scores

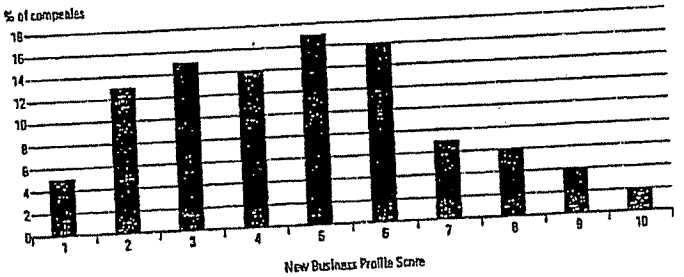
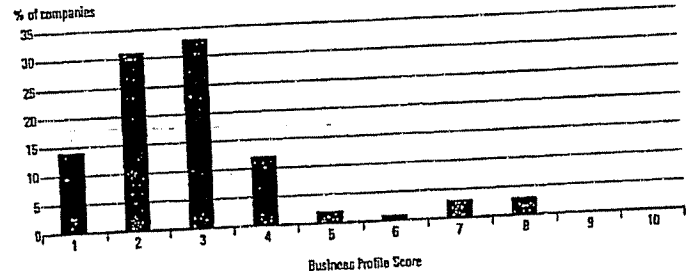


Chart 2

Transmission and Distribution—Water, Gas, and Electric



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erage as a key credit ratio was eliminated.

Finally, Standard & Poor's has segmented the utility and power industry into sub-sectors based on the dominant corporate strategy that a company is pursuing. Standard & Poor's has published a new U.S. utility and power company ranking list that reflects these sub-sectors.

There are numerous benefits to the reassessment. Fuller utilization of the entire 10-point scale provides a superior relative ranking of qualitative business risk. A revision of the financial guidelines supports the goal of not causing rating changes from the recalibration of the business profiles. Classification of companies by sub-sectors will ensure greater comparability and consistency in ratings. The use of industry segmentation will also allow more in-depth statistical analysis of ratings distributions and rating changes.

The reassessment does not represent a change to Standard & Poor's criteria or methodology for determining ratings for utility and power companies. Each business profile score should be considered as the assignment of a new score; these scores do not represent improvement or deterioration in our assessment of an individual company's business risk relative to the previously assigned score. The financial guidelines continue to be risk-adjusted based on historical utility and industrial medians. Segmentation into industry sub-sectors does not imply that specific company characteristics will not weigh heavily into the assignment of a company's business profile score.

Results

Previously, 83% of U.S. utility and power business profile scores fell between '3' and '6', which clearly does not reflect the risk differentiation that exists in the utility and power industry today. Since the 10-point scale was introduced, the industry has transformed into a much less homogenous industry, where the divergence of business risk—particularly regarding management, strategy, and degree of competitive market exposure—has created a much wider spectrum of risk profiles. Yet over the same period, business profile scores actually converged more tightly around a median score of '4'. The new business pro-

Chart 3

Transmission Only—Electric, Gas, and Other

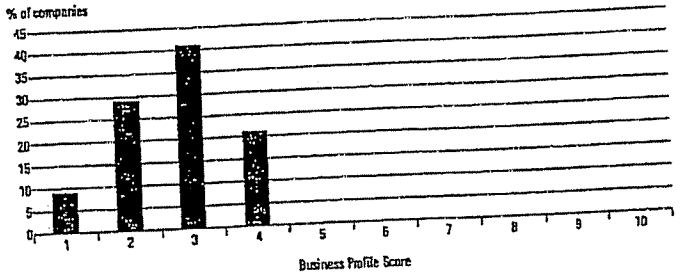
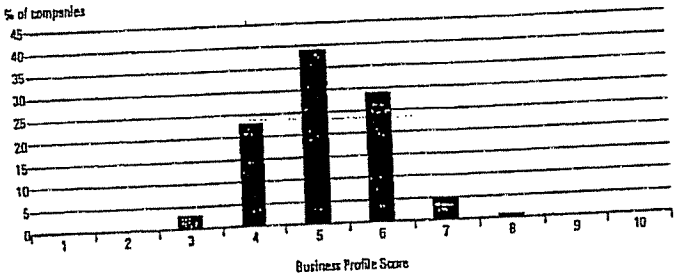


Chart 4

Integrated Electric, Gas, and Combination Utilities



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file scores, as of June 2, are shown in Chart 1. The overall median business profile score is now '5'.

Table 1 contains the revised financial guidelines. It is important to emphasize that these metrics are only guidelines associated with expectations for various rating levels. Although credit ratio analysis is an important part of the ratings process, these three statistics are by no means the only critical financial measures that Standard & Poor's uses in its analytical process. We also analyze a wide array of financial ratios that do not have published guidelines for each rating category.

Again, ratings analysis is not driven solely by these financial ratios, nor has it ever been. In fact, the new financial guidelines that Standard & Poor's is incorporating for the specified rating categories reinforce the analytical framework whereby other factors can outweigh the achievement of otherwise acceptable financial ratios. These factors include:

- Effectiveness of liability and liquidity management;
- Analysis of internal funding sources;
- Return on invested capital;
- The execution record of stated business strategies;
- Accuracy of projected performance versus actual results, as well as the trend;
- Assessment of management's financial policies and attitude toward credit; and
- Corporate governance practices.

Charts 2 through 6 show business profile scores broken out by industry sub-sector. The five industry sub-sectors are:

- Transmission and distribution—Water, gas, and electric;
- Transmission only—Electric, gas, and other;
- Integrated electric, gas, and combination utilities;
- Diversified energy and diversified nonenergy; and
- Energy merchant/power developer/trading and marketing companies.

The average business profile scores for transmission and distribution companies and transmission-only companies are lower on the scale than the previous averages, while the average business profile scores for integrated utilities, diversified energy, and energy merchants and developers are higher.

Chart 5

Diversified Energy and Diversified Non-Energy

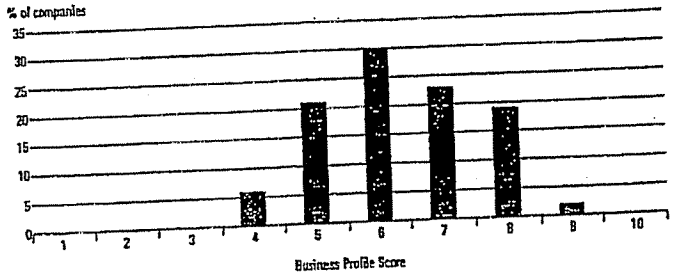
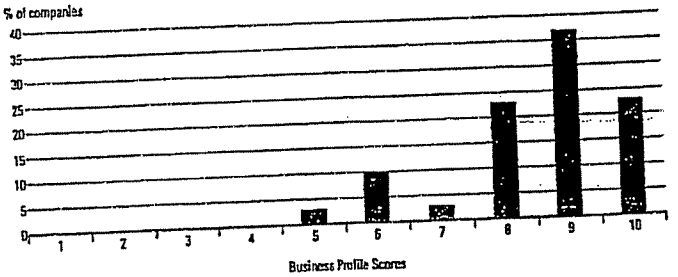


Chart 6

Energy Merchant/Developers/Trading and Marketing



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See pages 16 to 19 for the company ranking list of business profile scores segmented by industry sub-sector and ranked in order of credit rating, outlook, business profile score, and relative strength.

Business Profile Score Methodology

Standard & Poor's methodology of determining corporate utility business risk is anchored in the assessment of certain specific characteristics that define the sector. We assign business profile scores to each of the rated companies in the utility and power sector on a 10-point scale, where '1' represents the lowest risk and '10' the highest risk. Business profile scores are assigned to all rated utility and power companies, whether they are holding companies, subsidiaries, or stand-alone corporations. For operating subsidiaries and stand-alone companies, the score is a bottom-up assessment. Scores for families of companies are a composite of the operating subsidiaries' scores. The actual credit rating of a company is analyzed, in part, by comparing the business profile score with the risk-adjusted financial guidelines.

For most companies, business profile scores are assessed using five categories; specifically, regulation, markets, operations, competitiveness, and management. The emphasis placed on each category may be influenced by the

Table 1

Revised Financial Guidelines

Funds from operations/interest coverage (x)

Business Profile	AA		A		BBB		BB	
1	3	2.5	2.5	1.5	1.5	1		
2	4	3	3	2	2	1		
3	4.5	3.5	3.5	2.5	2.5	1.5	1.5	1
4	5	4.2	4.2	3.5	3.5	2.5	2.5	1.5
5	5.5	4.5	4.5	3.8	3.8	2.8	2.8	1.8
6	6	5.2	5.2	4.2	4.2	3	3	2
7	8	6.5	6.5	4.5	4.5	3.2	3.2	2.2
8	10	7.5	7.5	5.5	5.5	3.5	3.5	2.5
9			10	7	7	4	4	2.8
10			11	8	8	5	5	3

Funds from operation/total debt (%)

Business Profile	AA		A		BBB		BB	
1	20	15	15	10	10	5		
2	25	20	20	12	12	8		
3	30	25	25	15	15	10	10	5
4	35	28	28	20	20	12	12	8
5	40	30	30	22	22	15	15	10
6	45	35	35	28	28	18	18	12
7	55	45	45	30	30	20	20	15
8	70	55	55	40	40	25	25	15
9			65	45	45	30	30	20
10			70	55	55	40	40	25

Total debt/total capital (%)

Business Profile	AA		A		BBB		BB	
1	48	55	55	60	60	70		
2	45	52	52	58	58	68		
3	42	50	50	55	55	65	65	70
4	38	45	45	52	52	62	62	68
5	35	42	42	50	50	60	60	65
6	32	40	40	48	48	58	58	62
7	30	38	38	45	45	55	55	60
8	25	35	35	42	42	52	52	58
9			32	40	40	50	50	55
10			25	35	35	48	48	52

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dominant strategy of the company or other factors. For example, for a regulated transmission and distribution company, regulation may account for 30% to 40% of the business profile score because regulation can be the single-most important credit driver for this type of company. Conversely, competition, which may not exist for a transmission and distribution company, would provide a much lower proportion (e.g., 5% to 15%) of the business profile score.

For certain types of companies, such as power generators, power developers, oil and gas exploration and production companies, or nonenergy-related holdings, where these five components may not be appropriate, Standard & Poor's will use other, more appropriate methodologies. Some of these companies are assigned business profile scores that are useful only for relative ranking purposes.

As noted above, the business profile score for a parent or holding company is a composite of the business profile scores of its individual subsidiary companies. Again, Standard & Poor's does not apply rigid guidelines for determining the proportion or weighting that each subsidiary represents in the overall business profile score. Instead, it is determined based on a number of factors. Standard & Poor's will analyze each subsidiary's contribution to FFO, forecast capital expenditures, liquidity requirements, and other parameters, including the extent to which one subsidiary has higher growth. The weighting is determined case-by-case. ■

Ronald M. Barone
New York (1) 212-438-7662
Richard W. Cortright, Jr.
New York (1) 212-438-7665
Suzanne G. Smith
New York (1) 212-438-2106
John W. Whitlock
New York (1) 212-438-7678
Andrew Watt
New York (1) 212-438-7868
Arthur F. Simonson
New York (1) 212-438-2094

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PROXY GROUP OF SIX C. A. TURNER WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

	2003	2002	2001	2000	1999	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED	$470.63	$407.79	$375.00	$331.41	$292.07	
TOTAL PERMANENT CAPITAL	$32.07	$35.13	$30.67	$26.75	$24.88	
SHORT-TERM DEBT	$502.69	$442.92	$405.67	$358.16	$316.95	
TOTAL CAPITAL EMPLOYED						
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.02 %	6.27 %	6.84 %	7.42 %	7.64 %	
PREFERRED STOCK	3.98	5.73	5.31	5.20	5.40	
						5 YEAR AVERAGE
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.07 %	54.19 %	54.26 %	52.09 %	51.27 %	53.18 %
PREFERRED STOCK	0.49	0.57	0.76	0.88	0.98	0.74
COMMON EQUITY	45.44	45.24	44.98	47.03	47.75	46.09
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.27 %	57.19 %	57.64 %	54.89 %	54.12 %	56.22 %
PREFERRED STOCK	0.47	0.52	0.70	0.84	0.93	0.69
COMMON EQUITY	42.26	42.29	41.66	44.27	44.95	43.09
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.85 %	4.90 %	4.92 %	5.33 %	5.25 %	4.85 %
MARKET / AVERAGE BOOK RATIO	232.50	221.41	215.22	191.35	204.41	212.98
DIVIDEND YIELD	3.28	3.63	3.81	4.26	4.02	3.80
DIVIDEND PAYOUT RATIO	87.80	74.83	79.40	83.28	75.53	80.17
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.97 %	10.58 %	10.35 %	10.09 %	10.82 %	10.16 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.38 x	3.37 x	3.27 x	3.10 x	3.20 x	3.26 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	13.57 %	14.00 %	14.07 %	14.60 %	15.57 %	14.36 %
TOTAL DEBT / TOTAL CAPITAL	57.27 %	57.19 %	57.64 %	54.89 %	54.12 %	56.22 %

See Page 2 for notes.

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Proxy Group of Six C. A. Turner Water Companies
Capitalization and Financial Statistics
1999-2003, Inclusive

Notes:

(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year.

(2) Computed by relating actual long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

(4) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

Selection Criteria:

The basis of selection was to include those water companies: 1) which are included in the Water Company Group of C. A. Turner Public Utility Reports (October 2004); 2) which have Value Line (Standard Edition) five-year EPS growth rate projections or Thomson FN / First Call consensus five-year EPS growth rate projections; and 3) which have more than 70% of their 2003 operating revenues derived from water operations.

The following six water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
Artesian Resources, Inc.
California Water Service Group
Middlesex Water Company
York Water Co.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus
Research Insight Database
Company Annual Forms 10K

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United Water Idaho, Inc.
Capital Structure Based upon Total Capital for
the Proxy Group of Six C. A. Turner Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.28
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Artesian Resources Corp.						
Long-Term Debt	54.83 %	53.82 %	49.44 %	58.71 %	46.49 %	52.66 %
Short-Term Debt	9.39	3.24	16.68	3.65	10.69	8.73
Preferred Stock	0.00	0.17	0.66	0.76	1.00	0.50
Common Equity	35.78	42.77	33.32	36.88	41.82	38.11
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.05 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.12	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	50.57 %	47.29 %	49.70 %	50.48 %	51.88 %	49.98 %
Short-Term Debt	6.42	9.47	7.43	3.71	1.26	5.66
Preferred Stock	2.09	2.18	2.28	2.49	2.55	2.32
Common Equity	40.92	41.06	40.59	43.32	44.31	42.04
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	41.40 %	45.00 %	46.35 %	46.29 %	50.41 %	46.29 %
Short-Term Debt	9.07	3.77	2.83	3.90	2.20	4.35
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	49.53	51.23	50.82	47.81	47.39	49.36
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Six C A Turner Water Companies						
Long-Term Debt	50.22 %	50.60 %	50.04 %	49.14 %	48.21 %	49.64 %
Short-Term Debt	7.05	6.59	7.60	5.75	5.91	6.58
Preferred Stock	0.47	0.52	0.70	0.84	0.93	0.69
Common Equity	42.26	42.29	41.66	44.27	44.95	43.09
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information: Standard & Poor's Compustat Services, Inc . PC Plus / Research Insight Data Base

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Schedule (PMA-3), Page 3 of 3

PROXY GROUP OF THREE VALUE LINE (STANDARD EDITION) WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

	2003	2002	2001	2000	1999	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$812.16	$697.46	$643.70	$560.38	$487.73	
SHORT-TERM DEBT	$52.97	$62.16	$50.56	$49.53	$45.89	
TOTAL CAPITAL EMPLOYED	$865.13	$759.62	$694.26	$609.91	$533.62	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	5.90 %	6.04 %	6.66 %	7.44 %	8.00 %	
PREFERRED STOCK	2.83	3.84	4.03	3.76	3.90	
						5 YEAR AVERAGE
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.78 %	56.84 %	54.95 %	49.65 %	50.50 %	53.34 %
PREFERRED STOCK	0.24	0.28	0.47	0.63	0.72	0.47
COMMON EQUITY	44.98	42.88	44.58	49.72	48.78	46.19
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %
PREFERRED STOCK	0.24	0.25	0.44	0.59	0.68	0.44
COMMON EQUITY	42.45	39.57	41.75	45.88	45.39	43.01
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.89 %	5.17 %	4.70 %	5.47 %	5.00 %	4.85 %
MARKET / AVERAGE BOOK RATIO	225.26	217.33	225.22	208.93	221.95	219.34
DIVIDEND YIELD	3.32	3.63	3.61	3.77	3.65	3.60
DIVIDEND PAYOUT RATIO	86.86	69.87	78.54	69.17	71.36	75.16
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.86 %	11.10 %	10.40 %	11.37 %	11.28 %	10.60 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.53 x	3.63 x	3.57 x	3.40 x	3.57 x	3.54 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	14.60 %	14.73 %	15.23 %	16.70 %	18.17 %	15.89 %
TOTAL DEBT / TOTAL CAPITAL	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %

See Page 2 for notes.

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Proxy Group of Three Value Line (Standard Edition) Water Companies
Capitalization and Financial Statistics
1999-2003, Inclusive

Notes:

(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year.

(2) Computed by relating actual long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

(4) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

Selection Criteria:

The basis of selection was to include those water companies: 1) which are included in the Value Line (Standard Edition).

The following three water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
California Water Service Group

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus
Research Insight Database
Company Annual Forms 10K

Exhibit No. 12
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United Water Idaho, Inc.
Capital Structure Based upon Total Capital for
the Proxy Group of Three Value Line (Standard Edition) Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.16 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.05 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.12	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Three Value Line (Standard Edition) Water Companies						
Long-Term Debt	51.51 %	52.50 %	51.59 %	45.79 %	46.82 %	49.64 %
Short-Term Debt	5.80	7.68	6.22	7.74	7.11	6.91
Preferred Stock	0.24	0.25	0.44	0.59	0.68	0.44
Common Equity	42.45	39.57	41.75	45.88	45.39	43.01
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information: Standard & Poor's Compustat Services, Inc . PC Plus / Research Insight Data Base

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Schedule (PMA-4), Page 3 of 3

Carolina Water Service of South Carolina
Indicated Common equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

Based upon Historical and Projected Growth in DPS, EPS, and BR+SV

	1 Average Dividend Yield (1)	2 Dividend Growth Component (2)	3 Adjusted Dividend Yield (3)	4 Growth Rate (4)	5 Indicated Common Equity Cost Rate (5)
Proxy Group of Six C. A. Turner Water Companies					
American States Water Co	3.6 %	0.1 %	3.7 %	4.7 %	8.4 %
Aqua America, Inc.	2.3	0.1	2.4	9.9	12.3
Artesian Resources Corp.	3.2	0.1	3.3	6.3	9.6
California Water Services Group	3.9	0.1	4.0	5.6	9.6
Middlesex Water Company	3.7	0.1	3.8	3.1	6.9
York Water Company	3.4	0.1	3.5	4.7	8.2
Average	3.4 %	0.1 %	3.5 %	5.7 %	10.5 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co	3.6 %	0.1 %	3.7 %	4.7 %	8.4 %
Aqua America, Inc.	2.3	0.1	2.4	9.9	12.3
California Water Services Group	3.9	0.1	4.0	5.8	9.8
Average	3.3 %	0.1 %	3.4 %	6.7 %	11.0 % (6)

Based upon Projected Growth in EPS

	1 Average Dividend Yield (1)	2 Dividend Growth Component (2)	3 Adjusted Dividend Yield (3)	4 Growth Rate (4)	5 Indicated Common Equity Cost Rate (5)
Proxy Group of Six C. A. Turner Water Companies					
American States Water Co	3.6 %	0.1 %	3.7 %	6.3 %	10.0 %
Aqua America, Inc.	2.3	0.1	2.4	8.8	11.2
Artesian Resources Corp	3.2	0.1	3.3	8.5	11.8
California Water Services Group	3.8	0.2	4.1	8.5	12.6
Middlesex Water Company	3.7	0.1	3.8	6.0	9.8
York Water Company	3.4	0.1	3.5	7.0	10.5
Average	3.4 %	0.1 %	3.5 %	7.5 %	11.0 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co	3.6 %	0.1 %	3.7 %	6.3 %	10.0 %
Aqua America, Inc.	2.3	0.1	2.4	8.8	11.2
California Water Services Group	3.8	0.2	4.1	8.5	12.6
Average	3.3 %	0.1 %	3.4 %	7.9 %	11.3 % (6)
Conclusion					
Proxy Group of Six C. A. Turner Water Companies					10.8 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					11.2 %

Notes:
(1) From Schedule (PMA-5) of this Exhibit.
(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 1 of Schedule (PMA-7) of this Exhibit) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 3.6% x (1/2 x 4.7%) = 0.1%
(3) Column 1 + Column 2.
(4) From page 1 of Schedule (PMA-7) of this Exhibit
(5) Column 3 + Column 4
(6) Includes only those indicated common equity cost rates which are greater than 8.8%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.8% (from page 1 of Schedule (PMA-8) of this Exhibit)

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Schedule (PMA-5), Page 1 of 1

Carolina Water Service of South Carolina
Derivation of Dividend Yield for Use in the
Discounted Cash Flow Model

	Dividend Yield		
	Spot (10/07/04) (1)	Average of Last 3 Months (2)	Average Dividend Yield (3)
Proxy Group of Six C A Turner Water Companies			
American States Water Co	3 5 %	3 6 %	3 6 %
Aqua America, Inc	2 2	2 3	2 3
Artesian Resources Corp	3 1	3 2	3 2
California Water Services Group	3 8	4 0	3 9
Middlesex Water Company	3 7	3 7	3 7
York Water Company	3.4	3.3	3.4
Average	3.3 %	3.4 %	3.4 %
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co	3 5	3.6 %	3 6 %
Aqua America, Inc	2 2	2 3	2 3
California Water Services Group	3.8	4.0	3.9
Average	3.2 %	3.3 %	3.3 %

Notes:
(1) The spot dividend yield is the current annualized dividend per share divided by the spot market price on 10/07/04
(2) The average 3-month dividend yield was computed by relating the indicated annualized dividend rate and market price on the last trading day of each of the three months ended September 30, 2004
(3) Equal weight has been given to the 3-month average and spot dividend yield This provides recognition of current conditions, but does not place undue emphasis thereon

Source of Information: Standard & Poor's Compustat Services, Inc , PC Plus
Research Insight Database
finance.yahoo com

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Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-6), Page 1 of 1

United Water Idaho, Inc.
Current Institutional Holdings (1) and Individual Holdings (2) for
the Proxy Group of Six C. A. Turner Water Companies and
the Proxy Group of Three Value Line (Standard Edition) Water Companies

	1 October 2004 Percentage of Institutional Holdings	2 October 2004 Percentage of Individual Holdings (1)
Proxy Group of Six C. A. Turner Water Companies		
American States Water Co	39.3 %	60.7 %
Aqua America, Inc.	28.9	71.1
Artesian Resources Corp.	10.1	89.9
California Water Service Group	22.4	77.6
Middlesex Water Company	17.4	82.6
York Water Company	7.7	92.3
Average	21.0 %	79.0 %
Proxy Group of Three Value Line (Standard Edition) Water Companies		
American States Water Co	39.3 %	60.7 %
Aqua America, Inc.	28.9	71.1
California Water Service Group	22.4	77.6
Average	30.2 %	69.8 %

Notes: (1) (1 - column 1)

Source of Information: yahoo,Investor.reuters.com

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-7), Page 1 of 1

Carolina Water Service of South Carolina
Historical and Projected Growth

	1	2	4	5	6		7	8	9	10	11	12	13
	Value Line Historical Five Year Growth Rate (1)		Five Year Historical BR + SV (2)	Value Line Projected 2001-03 to 2007-09 Growth Rate (1)		Thomson/First Call Mean Consensus Projected Five Year Growth Rate		Average Projected Five Year Growth Rate in EPS (3)	Projected Five Year BR + SV (4)	Range of Growth Rates			Average of all Growth Rates	Average of Midpoint and Average of all Growth Rates (5)
	DPS	EPS		DPS	EPS	EPS	No. of Est.			Low	High	Midpoint		
Proxy Group of Six C. A. Turner Water Companies														
American States Water Co	10 %	15 %	44 %	15 %	95 %	300 %	(1)	83 %	71 %	10 %	95 %	53 %	40 %	47 %
Aqua America, Inc.	00	95	156	70	90	667	(3)	86	73	60	156	108	80	89
Artesian Resources Corp	44 (5)	57 (5)	54	NA	NA	650	(2)	85	NA	44	85	65	60	63
California Water Services Group	10	(65)	49	10	110	600	(3)	85	72	10 (6)	110	00	52	56
Middlesex Water Company	25	05	23	NA	NA	600	(1)	60	NA	05	60	33	28	31
York Water Company	70 (5)	42 (5)	37	NA	NA	700	(1)	70	NA	70	70	50	43	47
Average	30 %	43 % (6)	60 %	32 %	98 %	653 %		75 %	72 %	26 %	98 %	62 %	57 %	57 %
Proxy Group of Three Value Line (Standard Edition) Water Companies														
American States Water Co	10 %	15 %	44 %	15 %	95 %	300 %	(1)	83 %	71 %	10 %	95 %	53 %	40 %	47 %
Aqua America, Inc	00	95	156	70	90	667	(3)	86	73	60	156	108	80	89
California Water Services Group	10	(65)	49	10	110	600	(3)	85	72	10 (6)	110 (6)	60	52	56
Average	37 %	55 % (6)	83 %	32 %	98 %	589 %		79 %	72 %	27 %	120 %	74 %	61 %	67 %

Notes
(1) As shown on pages 6 through 12 of this Schedule. Historical growth rates are five-year compound growth rates
(2) From page 2 of this Schedule
(3) Average of Columns 5 and 6
(4) From page 6 of this Schedule.
(5) Calculated using the same methodology as Value Line Investment Survey, i.e., three-year base periods ending 2003
(6) Average of Columns 1, 2, 3, 4, 5, 6, and 8
(7) From Column 7
(8) Excludes negatives
(9) Average of Column 11 and Column 12.

Source of Information: Value Line Investment Survey, October 29, 2004
ThomsonFN (First Call Earnings), 4c.thomsonfn.com, accessed October 7, 2004

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-8), Page 1 of 12

Carolina Water Service of South Carolina
Calculation of Historical BR + SV

	1 BR (1)	2 S Factor (2)	3 V Factor (3)	4 SV (4)	5 BR + SV (5)
Proxy Group of Six C.A. Turner Water Companies					
American States Water Co.	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
Artesian Resources Corp.	2.2	8.0	40.6	3.2	5.4
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Middlesex Water Company	1.5	1.5	56.4	0.8	2.3
York Water Company	2.0	2.1	55.0	1.2	3.2
Average	2.7 %	6.1 %	51.5 %	3.3 %	6.0 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Average	3.5 %	8.3 %	52.4 %	4.8 %	8.3 %

Notes:
(1) From column 6, page 3 of this Schedule.
(2) From column 12, page 4 of this Schedule.
(3) From column 7, page 5 of this Schedule.
(4) Column 2 * column 3.
(5) Column 1 + column 4.

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
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Carolina Water Service of South Carolina
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies
for the Years 1999 -2003

	1	2	3	4	5	6
	2003	2002	2001	2000	1999	Five-Year Average 1999-2003 Internal Growth Rate, i.e., BR
Proxy Group of Six C. A. Turner Water Companies						
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
Artesian Resources Corp.						
Common Equity Return Rate	7.41 %	9.67 %	9.80 %	7.39 %	9.74 %	
Retention Ratio	19.24	34.96	31.35	8.12	27.74	
Internal Growth Rate (1)	1.43	3.38	3.07	0.60	2.70	2.2
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Middlesex Water Company						
Common Equity Return Rate	8.17 %	10.10 %	9.37 %	7.16 %	11.05 %	
Retention Ratio	(6.51)	13.33	5.88	(21.76)	22.73	
Internal Growth Rate (1)	(0.53)	1.35	0.55	(1.56)	2.51	1.5 (2)
York Water Company						
Common Equity Return Rate	11.66 %	10.37 %	11.73 %	11.88 %	10.31 %	
Retention Ratio	21.04	12.32	21.97	21.50	10.46	
Internal Growth Rate (1)	2.45	1.28	2.58	2.55	1.08	2.0
Average						2.7 %
Proxy Group of Three Value Line (Standard Edition) Water						
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Average						3.5 %

Notes: (1) The internal growth rate is calculated by multiplying the common equity return rate by the retention ratio (100% minus the dividend payout ratio). All data are on a consolidated basis

(2) Excludes negatives

Source of Information: Standard & Poor's Compustat Services, Inc PC Plus Research Insight Database

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-8), Page 3 of 12

Carolina Water Service of South Carolina
Calculation of Five Year Average Growth in Common Shares Outstanding (1), i.e., S Factor

	1 1998 Common Shares Outstanding (1)	2 97-98 Growth	3 1999 Common Shares Outstanding (1)	4 98-99 Growth	5 2000 Common Shares Outstanding (1)	6 99-00 Growth	7 2001 Common Shares Outstanding (1)	8 00-01 Growth	9 2002 Common Shares Outstanding (1)	10 01-02 Growth	11 2003 Common Shares Outstanding (1)	12 Five Year Average Common Share Growth
Proxy Group of Six C. A. Turner Water Companies												
American States Water Co.	13,437	0.0 %	13,437	12.5 %	15,120	0.0 %	15,120	0.4 %	15,181	0.2 %	15,212	2.6 %
Aqua America, Inc.	54,154	47.9	80,104	4.7	83,869	1.9	85,483	(0.7)	84,886	9.1	92,589	15.9 (2)
Artesian Resources Corp.	2,704	10.8	2,997	0.8	3,020	1.3	3,060	28.2	3,883	1.0	3,001	8.0
California Water Services Group	12,619	2.5	12,936	17.1	15,148	0.2	15,182	0.0	15,182	11.5	16,932	6.3
Middlesex Water Company	9,794	2.1	10,002	1.0	10,098	0.7	10,168	1.6	10,356	2.0	10,567	1.5
York Water Company	5,650	(1.0)	5,602	1.8	6,010	5.0	6,308	0.9	6,365	0.8	6,419	2.1 (2)
Average												6.1 %
Proxy Group of Three Value Line (Standard Edition) Water Companies												
American States Water Co.	13,437	0.0 %	13,437	12.5 %	15,120	0.0 %	15,120	0.4 %	15,181	0.2 %	15,212	2.6 %
Aqua America, Inc.	54,154	47.9	80,104	4.7	83,869	1.9	85,483	(0.7)	84,886	9.1	92,589	15.9 (2)
California Water Services Group	12,619	2.5	12,936	17.1	15,148	0.2	15,182	0.0	15,182	11.5	16,932	6.3
Average												8.3 %

Notes: (1) Year-end shares outstanding.
(2) Excludes negatives.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Database

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-8), Page 4 of 12

Carolina Water Service of South Carolina
Calculation of the Premium/Discount of a
Company's Stock Price Relative to its Book Value, i.e., V Factor

	1	2	3	4	5	6	7
	1999 Market to Book Ratio (1)	2000 Market to Book Ratio (1)	2001 Market to Book Ratio (1)	2002 Market to Book Ratio (1)	2003 Market to Book Ratio (1)	Five Year Average Market to Book Ratio	V Factor (2)
Proxy Group of Six C. A. Turner Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.4 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.0
Artesian Resources Corp.	168.0	163.3	163.8	162.1	184.5	168.3	40.6
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.8
Middlesex Water Company	218.3	209.9	236.9	232.9	247.9	229.2	56.4
York Water Company	174.4	154.2	214.9	281.5	286.9	222.4	55.0
Average						213.0 %	51.5 %
Proxy Group of Three Value Line (Standard Edition) Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.4 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.0
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.8
Average						219.3 %	52.4 %

Notes: (1) Market to Book Ratio = average of yearly high-low market price divided by the average of beginning and ending year's balance of book common equity per share.
(2) (1 - (100 / column 6)).

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Database

Exhibit No. 12
Case No. UWI-W-04-04
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Carolina Water Service of South Carolina
Calculation of Projected BR + SV

	1	2	3	4	5	6	7	8	9	10	11
	Common Shares Outstanding (1) (000,000)			Projected 2007 - 2009 (1)							
	Actual 2003	Projected 2007-2009	S Factor (2)	High Stock Price	Low Stock Price	Book Value	Average Stock Price (3)	V Factor (4)	SV (5)	BR (6)	BR + SV (7)
Proxy Group of Six C. A. Turner Water Companies											
American States Water Co.	15.21	19.00	4.6 %	$30.00	$20.00	$17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.6	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Middlesex Water Company	10.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
York Water Company	6.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			4.2 %					43.6 %	1.6 %	5.6 %	7.2 %
Proxy Group of Three Value Line (Standard Edition) Water											
American States Water Co.	15.21	19.00	4.6 %	$30.00	$20.00	$17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.6	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Average			4.2 %					43.8 %	1.6 %	5.6 %	7.2 %

NA = Not Available

Notes:
(1) From pages 8 through 12 of this Schedule.
(2) The S Factor is the six or five year compound growth rate between the 2002 and 2007 (mid-point of 2006-2008 projection) common shares outstanding.
(3) The Average Stock Price is the average of column 4 and column 5.
(4) (1 - (column 6 / column 7))
(5) Column 3 * column 8.
(6) From page 7, column 14 of this Schedule.
(7) Column 9 + column 10.
(8) Excludes negatives

Source of Information: Value Line Investment Survey, October 29, 2004

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-8), Page 6 of 12

Carolina Water Service of South Carolina
Projected Internal Growth Rate

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	2003			2007-2009					2007-2009					
	Common Equity (%) (1)	Total Capital ($ mil) (1)	Common Equity ($ mil) (2)	Common Equity (%) (1)	Total Capital ($ mil) (1)	Common Equity ($ mil) (3)	Annual Common Equity Growth Rate (4)	ROE Adjustment Factor (5)	Return on Common Equity (1)	Return on Average Common Equity (6)	EPS (1)	DPS (1)	Retention Ratio (7)	Projected Internal Growth (8)
Proxy Group of Six C. A. Turner Water Companies														
American States Water Co.	48.00 %	$442.30	$212.30	48.00 %	$700.00	$343.00	10.07 %	1.05 %	10.50 %	11.03 %	$2.00	$0.96	52.0 %	5.7 %
Aqua America, Inc.	48.60	1,355.70	659.87	48.00	2,100.00	868.00	7.05	1.04	13.00	13.52	1.20	0.64	46.7	6.3
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Services Group	47.00	520.30	244.54	50.00	840.00	420.00	11.42	1.05	11.00	11.55	2.00	1.18	41.0	4.7
Middlesex Water Company	NA	NA	83.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
York Water Company	56.60	69.00	NA	NA	NA	NA	NA	NA	NA	NA				NA
Average														5.6 %
Proxy Group of Three Value Line (Standard Edition) Water Companies														
American States Water Co.	48.00 %	$442.30	$212.30	48.00 %	$700.00	$338.00	9.62 %	1.05 %	10.50 %	11.03 %	$2.00	$0.96	52.0 %	5.7 %
Aqua America, Inc.	48.60	1,355.70	659.87	48.60	2,100.00	1,020.60	9.15	1.04	13.00	13.52	1.20	0.64	46.7	6.3
California Water Services Group	47.00	520.30	244.54	47.00	840.00	394.80	10.05	1.05	11.00	11.55	2.00	1.18	41.0	4.7
Average														5.6 %

NA = Not Available

Notes:
(1) From pages 8 through 12 of this Schedule.
(2) Column 1 * column 2.
(3) Column 4 * column 5.
(4) Five year compound growth rate in common equity from 2003 to 2007-2009 or ((((column 5 / column 3) ^ (1/5)) - 1)).
(5) 1 * ((1 + column 7) / (2 + column 7)).
(6) Column 9 * column 8.
(7) 1 - (column 12 / column 11).
(8) Column 10 * column 13.

Source of Information: Value Line Investment Survey, October 29, 2004

Exhibit No. 12
Case No. UWI-W-04-04
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AMER. STATES WATER NYSE-AWR

RECENT PRICE 22.62 | P/E RATIO 18.1 (Trailing: 34.3, Median: 16.0) | RELATIVE P/E RATIO 1.02 | DIV'D YLD 4.0% | VALUE LINE

TIMELINESS 4 Raised 11/7/03
SAFETY 3 New 2/4/00
TECHNICAL 3 Lowered 7/16/04
BETA .65 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+35%)	10%
Low	20	(-10%)	1%

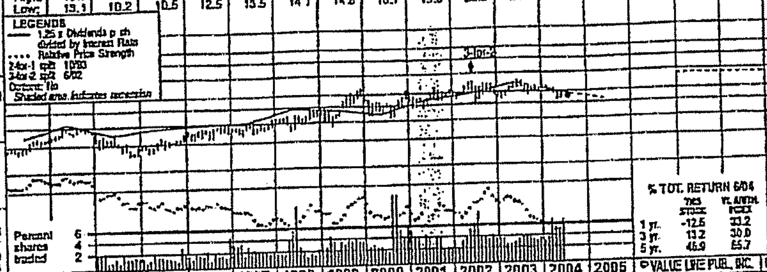
Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	1	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2003	4Q2003	1Q2004
to Buy	34	46	47
to Sell	46	31	33
Hld's(000)	5622	5663	5623

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
High:	16.3	14.7	14.0	16.1	17.1	18.5	26.5	25.3	26.4	29.0	29.0	26.8
Low:	13.1	10.2	10.5	12.5	13.5	14.1	14.8	16.7	19.0	20.3	21.6	20.8



% TOT. RETURN 6/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	-12.6	33.2
3 yr.	13.2	30.0
5 yr.	46.9	65.7

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
8.58	9.12	9.58	9.15	10.10	9.27	10.43	11.03	11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	14.40	15.80	Revenues per sh	15.55
1.13	1.44	1.49	1.78	1.81	1.67	1.68	1.76	1.75	1.85	2.04	2.26	2.20	2.53	2.54	2.08	2.60	2.90	"Cash Flow" per sh	3.40
.65	.92	.94	1.19	1.15	1.11	.95	1.03	1.13	1.04	1.08	1.19	1.28	1.35	1.34	.78	1.25	1.55	Earnings per sh A	2.00
.67	.69	.72	.73	.77	.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.88	.90	Div'd Decl'd per sh B	.95
2.39	2.46	2.53	2.77	2.31	1.90	2.43	2.19	2.40	2.58	3.11	4.30	3.03	3.18	2.68	3.76	4.00	4.45	Cap'l Spending per sh	3.60
7.07	7.31	7.54	8.39	8.85	9.95	10.07	10.29	11.01	11.24	11.48	11.82	12.74	13.22	14.05	13.97	15.00	16.75	Book Value per sh	17.50
9.35	9.39	9.43	9.91	9.56	11.71	11.77	11.77	13.33	13.44	13.44	13.44	15.12	15.12	15.18	15.21	16.00	17.00	Common Shs Outst'g C	19.00
14.2	9.7	10.2	8.8	10.6	13.4	12.8	11.6	12.6	14.5	15.5	17.1	15.9	16.7	18.3	31.5	Bold figures are	Value Line	Avg Ann'l P/E Ratio	13.0
1.16	.73	.76	.56	.64	.79	.84	.78	.79	.84	.81	.97	1.03	.86	1.00	1.25	estimates		Relative P/E Ratio	.85
7.4%	7.7%	7.6%	7.0%	6.3%	5.3%	6.6%	6.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%			Avg Ann'l Div'd Yield	3.7%
						122.7	129.8	151.5	153.8	148.1	173.4	184.0	197.5	209.2	212.7	230	255	Revenues ($mill)	295
						11.3	12.2	13.5	14.1	14.6	16.1	18.0	20.4	20.3	11.9	21.0	26.5	Net Profit ($mill)	36.0
						43.9%	41.9%	43.3%	41.1%	40.9%	46.0%	45.7%	43.0%	38.9%	43.5%	40.0%	40.0%	Income Tax Rate	40.0%
						--	--	--	--	--	--	--	--	--	--	NIL	NIL	AFUDC % to Net Profit	NIL
						43.5%	46.5%	41.9%	43.0%	43.6%	51.0%	47.5%	54.9%	52.0%	52.0%	51.0%	51.0%	Long-Term Debt Ratio	52.0%
						55.5%	52.5%	57.3%	56.3%	55.7%	48.4%	51.9%	44.7%	48.0%	48.0%	50.0%	49.0%	Common Equity Ratio	48.0%
						213.5	230.6	256.0	268.4	277.1	328.2	371.1	447.6	444.4	442.3	490	545	Total Capital ($mill)	700
						314.9	335.0	357.8	383.6	414.8	449.6	509.1	539.8	563.3	602.3	650	715	Net Plant ($mill)	850
						7.1%	7.2%	6.9%	6.9%	7.0%	6.6%	6.4%	6.1%	6.5%	4.5%	6.0%	6.5%	Return on Total Cap'l	7.0%
						9.4%	9.9%	9.0%	9.2%	9.4%	10.0%	9.2%	10.1%	9.5%	5.6%	8.0%	8.5%	Return on Shr. Equity	10.0%
						9.5%	10.0%	9.0%	9.2%	9.4%	10.1%	9.3%	10.1%	9.5%	6.6%	8.0%	8.5%	Return on Com Equity	10.0%
						1.6%	2.1%	2.4%	1.8%	2.1%	2.9%	3.0%	3.6%	3.3%	NMF	3.0%	3.5%	Retained to Com Eq	4.5%
						84%	79%	73%	80%	78%	72%	68%	65%	65%	113%	67%	58%	All Div'ds to Net Prof	51%

CAPITAL STRUCTURE as of 3/31/04
Total Debt $277.4 mill. Due in 5 Yrs $60.0 mill.
LT Debt $229.6 mill. LT Interest $16.5 mill.
(Total interest coverage: 2.0x)

Leases, Uncapitalized: None
Pension Assets-12/03 $46.7 mill.
Oblig. $58.9 mill.
Pfd Stock None. Pfd Div'd None.

Common Stock 15,244,028 shs.
as of 5/10/04
MARKET CAP: $350 million (Small Cap)

CURRENT POSITION ($MILL.)	2002	2003	3/31/04
Cash Assets	18.4	12.8	9.0
Receivables	10.8	11.8	8.7
Inventory (Avg Cst)	.9	1.4	1.4
Other	21.7	32.4	20.5
Current Assets	51.8	58.4	39.6
Accts Payable	11.6	18.8	13.4
Debt Due	48.3	56.8	47.8
Other	18.6	20.3	21.7
Current Liab.	78.5	85.90	82.4
Fix. Chg. Cov.	285%	255%	200%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	3.5%	4.0%	3.0%
"Cash Flow"	3.0%	5.0%	7.0%
Earnings	--	1.5%	9.5%
Dividends	1.5%	1.0%	1.5%
Book Value	4.5%	4.0%	4.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	40.3	49.9	59.4	47.9	197.5
2002	44.5	52.8	61.6	50.3	209.2
2003	46.7	61.8	63.7	50.5	212.7
2004	46.7	59.0	69.0	55.3	230
2005	53.0	66.0	76.0	60.0	255

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.21	.33	.63	.18	1.35
2002	.25	.36	.50	.23	1.34
2003	.20	.13	.51	d.12	.78
2004	.08	.34	.59	.24	1.25
2005	.27	.38	.63	.27	1.55

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.213	.213	.213	.217	.86
2001	.217	.217	.217	.217	.87
2002	.217	.217	.217	.221	.87
2003	.221	.221	.221	.221	.88
2004	.221	.221			

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Southern California Water Company, it supplies water to 75 communities in 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to approximately 22,000 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/00); 11,400 customers. Has about 520 employees. Off. & dir. own less than 1% of common stock (4/04 Proxy). Chairman: Lloyd Ross. President & CEO: Floyd Wicks. Incorporated: CA. Add.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel.: 909-394-3600. Web: www.aswater.com.

American States Water Company continues to disappoint. The company reported first-quarter earnings of $0.08 a share, nearly 70% lower than we anticipated and 60% lower than 2003's lackluster total. Revenues were flat in the quarter due to a delay in the rate increase in the Region III customer service area of the company's Southern California Water Company (SCW) unit. The increase, which was expected to be in place for the first quarter, was not effective until late in March. Making matters worse was an increase in supply costs due to more purchased water in SCW's resource mix. As a result, we have lowered our 2004 earnings estimate by $0.20, to $1.25 a share.

The California Public Utilities Commission (CPUC) ought to provide more favorable rulings going forward. Aside from the aforementioned rate hike, which should be included in the company's second-quarter results (not yet released when we went to press), American recently announced that another decision by the CPUC on July 8th should result in a $6.2 million pre tax gain. In addition, the company has reached an agreement with the commission that will provide for increased revenues in the Region II customer service area of SCW, anticipated to begin in September. The rate case should generate an additional three year increase in revenues of $15 million. We believe that the current administration's focus on delivering more timely decisions augurs well for AWR's top line going forward.

A tighter regulatory environment, though, will probably dilute some of these gains in 2005. With regulatory and infrastructure costs on the rise, AWR is looking to a share offering to fund the needed upkeep. About $30 million in stock will likely be offered within the next year. As such, we are leaving our 2005 bottom-line estimate untouched at $1.55 a share.

We do not recommend American shares. They are ranked to underperform the broad market in the year ahead and they offer little in the way of appreciation potential out to 2007-2009. In addition, the company will be hard-pressed to increase its dividend payment substantially as cash flow will likely continue to be limited by the rising maintenance costs.

Andre J. Costanza *July 30, 2004*

(A) Primary earnings. Excludes nonrecurring gains: '91, 73¢; '02, 13¢. Next earnings report due late Oct.

(B) Dividends historically paid in early-March, June, September, December. ■ Div'd reinvestment plan available.

(C) In millions, adjusted for splits.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	65
Earnings Predictability	70

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-8), Page 8 of 12

AQUA AMERICA NYSE-WTR

RECENT PRICE	19.37	P/E RATIO	22.8 (Trailing: 24.8 Median: 20.0)	RELATIVE P/E RATIO	1.29	DIV'D YLD	2.5%	VALUE LINE

TIMELINESS 4 Lowered 6/4/04
SAFETY 3 Lowered 8/1/00
TECHNICAL 4 Lowered 7/23/04
BETA .75 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+55%)	14%
Low	20	(+5%)	4%

Insider Decisions

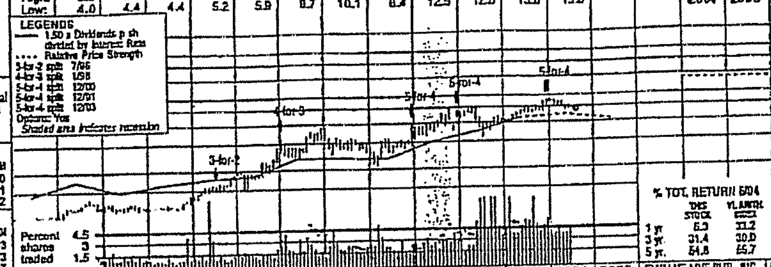
	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	1	0	0
Options	1	0	2	0	0	0	0	0	1
to Sell	1	0	1	0	0	0	0	0	2

Institutional Decisions

	3Q2003	4Q2003	1Q2004
to Buy	93	85	93
to Sell	67	88	73
Hld's(000)	23509	20673	20637

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
High:	5.3	5.0	5.5	7.6	11.4	15.4	15.4	16.0	19.7	20.0	22.4	22.8	
Low:	4.0	4.4	4.4	5.2	5.9	8.7	10.1	8.4	12.5	12.8	15.8	19.0	

LEGENDS
— 1.50 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 7/96
4-for-3 split 1/98
5-for-4 split 12/00
5-for-4 split 12/01
5-for-4 split 12/03
Options: Yes
Shaded area indicates recession



Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 6/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	6.3	33.2
3 yr.	31.4	30.0
5 yr.	54.8	55.7

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
4.45	4.53	2.70	2.85	2.43	2.27	2.42	2.45	2.48	2.69	2.79	3.21	3.29	3.59	3.78	3.87	4.65	4.85	Revenues per sh	6.00
.56	.65	.58	.59	.52	.56	.56	.63	.67	.74	.81	.96	1.01	1.15	1.26	1.28	1.45	1.60	"Cash Flow" per sh	2.00
.30	.27	.33	.33	.31	.33	.35	.39	.40	.46	.53	.55	.62	.68	.72	.76	.85	.95	Earnings per sh A	1.20
.24	.24	.26	.26	.27	.27	.28	.29	.30	.32	.34	.36	.38	.40	.43	.46	.48	.52	Div'd Decl'd per sh B■	.64
.88	1.15	1.01	.72	.80	.63	.61	.69	.64	.77	1.09	1.20	1.55	1.45	1.50	1.76	1.60	1.55	Cap'l Spending per sh	1.50
2.88	2.92	2.80	2.76	2.79	3.05	3.21	3.28	3.59	3.79	4.28	4.57	5.13	5.53	5.81	7.12	7.55	7.95	Book Value per sh D	8.60
28.27	29.45	30.48	31.06	33.40	44.55	44.83	47.81	49.31	50.60	54.15	80.10	83.87	85.46	84.90	92.59	95.00	92.00	Common Shs Outst'g C	100.00
12.3	12.9	10.2	10.8	12.5	14.4	13.5	12.0	15.6	17.8	22.6	21.2	18.2	23.6	23.6	24.5	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	21.0
1.02	.98	.76	.69	.76	.85	.89	.80	.98	1.03	1.17	1.21	1.18	1.21	1.29	1.42			Relative P/E Ratio	1.40
6.5%	6.9%	7.7%	7.2%	6.8%	5.9%	6.0%	6.2%	4.9%	3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%			Avg Ann'l Div'd Yield	2.6%
						108.6	117.0	122.5	136.2	151.0	257.3	275.5	307.3	322.0	367.2	440	475	Revenues ($mill)	600
						15.6	19.0	19.8	23.2	28.8	45.0	50.7	68.5	62.7	67.3	80.0	85.0	Net Profit ($mill)	125
						42.5%	40.4%	41.4%	40.6%	40.5%	38.4%	38.9%	39.3%	38.5%	39.3%	40.0%	40.0%	Income Tax Rate	40.0%
						.8%	1.6%	1.3%	4.0%	4.3%	4.4%	5.3%	2.1%	2.2%	3.2%	3.5%	3.5%	AFUDC % to Net Profit	4.0%
						50.2%	51.9%	54.1%	54.4%	52.7%	52.9%	52.0%	52.2%	54.2%	51.4%	53.5%	54.5%	Long-Term Debt Ratio	54.0%
						47.4%	46.4%	44.0%	44.8%	46.6%	45.7%	47.8%	47.7%	45.8%	48.6%	46.5%	45.5%	Common Equity Ratio	46.0%
						303.1	336.0	401.7	427.2	496.6	782.7	901.1	990.4	1076.2	1355.7	1550	1725	Total Capital ($mill)	2100
						385.7	436.9	502.9	534.6	609.8	1135.4	1251.4	1368.1	1490.8	1824.3	1925	2025	Net Plant ($mill)	2300
						7.0%	7.7%	6.8%	7.4%	7.6%	7.6%	7.4%	7.8%	7.6%	6.4%	6.5%	7.0%	Return on Total Cap'l	7.5%
						10.4%	11.7%	10.7%	11.9%	12.3%	12.2%	11.7%	12.3%	12.7%	10.2%	11.0%	12.0%	Return on Shr. Equity	13.0%
						10.3%	11.7%	11.2%	12.0%	12.4%	12.3%	11.7%	12.4%	12.7%	10.2%	11.0%	12.0%	Return on Com Equity	13.0%
						2.1%	3.5%	2.8%	3.6%	4.5%	4.3%	4.7%	5.1%	5.2%	4.2%	5.0%	5.5%	Retained to Com Eq	6.0%
						81%	71%	75%	70%	64%	65%	60%	59%	59%	59%	56%	57%	All Div'ds to Net Prof	52%

CAPITAL STRUCTURE as of 3/31/04
Total Debt $846.2 mill. Due in 5 Yrs $230.0 mill.
LT Debt $686.3 mill. LT Interest $45.0 mill.
(Total interest coverage: 3.5x)

Pension Assets-12/03 $108.7 mill.
Oblig. $150.1 mill.

Pfd Stock None

Common Stock 92,845,623 shares
as of 4/29/04

MARKET CAP: $1.8 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2002	2003	3/31/04
Cash Assets	49.7	39.2	37.6
Receivables	57.7	62.3	58.5
Inventory (AvgCst)	4.6	5.8	6.2
Other	2.7	5.1	6.1
Current Assets	114.7	112.4	107.4
Accts Payable	31.1	32.3	11.6
Debt Due	149.4	135.8	159.9
Other	46.0	63.9	66.8
Current Liab.	226.5	232.0	238.3
Fix. Chg. Cov.	347%	344%	308%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.0%	7.5%	8.0%
"Cash Flow"	8.5%	10.5%	8.5%
Earnings	8.5%	9.5%	9.0%
Dividends	5.0%	6.0%	7.0%
Book Value	8.0%	8.5%	7.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	70.2	77.3	84.7	75.1	307.3
2002	71.7	76.6	91.9	81.8	322.0
2003	80.5	83.4	102.1	101.2	367.2
2004	99.8	105	120.2	115	440
2005	105	115	130	125	475

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.14	.18	.22	.14	.68
2002	.14	.16	.25	.17	.72
2003	.15	.18	.24	.19	.76
2004	.17	.21	.25	.22	.85
2005	.19	.23	.27	.26	.95

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.092	.092	.092	.099	.38
2001	.099	.099	.099	.106	.40
2002	.106	.106	.106	.112	.43
2003	.112	.112	.112	.12	.46
2004	.12	.12			

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately 2.5 million residents in Pennsylvania, Ohio, New Jersey, Illinois, Maine, North Carolina, Texas, Florida, Kentucky, and five other states. Divested three of four non-water businesses in '01; telemarketing group in '93; and others. Acquired Consumers Water, 4/99; AquaSource, 7/03; and others. Water supply revenues '03: residential, 59%; commercial, 17%; industrial & other, 24%. Officers and directors own 1.4% of the common stock (4/04 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.

Aqua America continues to grow through acquisitions. The company recently announced the completion of its purchase of Heater Utilities, adding more than 50,000 new customers in North Carolina to its total. A deal was also finalized to purchase water and wastewater systems that will add 40,000 customers in Florida, thereby more than doubling its customer base in the state. Combined with various smaller purchases, the company is more than half way to management's goal of 30 acquisitions for the year. We expect annual revenue growth of approximately 7% for the next 3 to 5 years as acquisitions from 2003 forward are integrated. However,

Margins are being pressured by integration expenses and higher interest rates. As new management is put in place, redundant operations are being trimmed, but not before a period of overlapping operations. Pension expenses and severance costs associated with downsized labor forces also pressure margins. Too, as interest rates rise, the cost of debt for acquisitions may hurt results.

Rate negotiations are ongoing for regulated subsidiaries in various states. Operations in Illinois were recently granted a 21% increase in rates, totaling approximately $2.1 million. Applications have been filed in Pennsylvania, New Jersey, and Texas for annual revenue increases of $25 million, $2.6 million, and $12 million, respectively. Management has also revealed plans to file for increases in Ohio, North Carolina, and Florida. Traditionally, rate negotiations take a number of months, and the rate increase that is awarded is subject to change based on an expected return on equity and capital improvements. Therefore, we do not expect new rates to take effect until the second half of the year, but they should help revenue growth for the next few years.

Aqua America shares offer little appreciation potential through 2007-2009. Growth through acquisition should continue to improve results, but the regulated nature of the industry may well limit the speed at which new businesses become accretive to earnings. But this unfavorably ranked stock does offer predictable returns and a growing dividend.

Matthew B. V. Albrecht *July 30, 2004*

(A) Primary shares outstanding through '96; diluted thereafter. Excl. nonrec. gains (losses): '90, (38¢); '91, (34¢); '92, (38¢); '99, (11¢); '00, 2¢; '01, 2¢; '02, 5¢; '03, 4¢. Excl. gain from disc. operations: '96, 2¢. Next earnings report due early August. (B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd reinvestment plan available (5% discount). (C) In millions, adjusted for stock splits. (D) Incl. deferred charges. In '03: $34.3 mill., $0.37/sh.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	85
Earnings Predictability	100

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-8), Page 9 of 12

CALIFORNIA WATER NYSE-CWT

RECENT PRICE 27.00 | P/E RATIO 16.9 (Trailing: 20.5 / Median: 17.0) | RELATIVE P/E RATIO 0.95 | DIV'D YLD 4.2% | VALUE LINE

TIMELINESS 4 Lowered 4/23/04
SAFETY 2 Lowered 6/11/99
TECHNICAL 3 Lowered 7/23/04
BETA .70 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	40	(+50%)	+3%
Low	30	(+10%)	7%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	1	0	0	0	0	1
Options to Sell	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0

Institutional Decisions

	2Q2003	3Q2003	4Q2003
to Buy	27	40	42
to Sell	23	16	19
Hld's(000)	2968	3465	3785

High:	20.6	20.5	17.6	21.9	29.6	33.8	32.0	31.4	29.6	26.9	31.4	30.2			
Low:	16.1	14.7	14.8	16.3	18.9	20.8	22.6	21.5	22.9	20.5	23.7	26.4			

LEGENDS
133 x Dividends p sh divided by Interest Rate
Relative Price Strength
2-for-1 split 1/99
Options: No
Shaded area indicates recession

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 6/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	2.0	23.2
3 yr.	22.3	30.0
5 yr.	23.5	65.7

© VALUE LINE PUB., INC. 07-09

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
10.03	10.33	10.93	11.18	12.29	13.34	12.59	13.17	14.48	15.48	14.76	15.96	16.16	16.26	17.33	16.37†	17.60	18.65	Revenues per sh
1.67	1.89	1.97	1.96	1.92	2.25	2.02	2.07	2.50	2.92	2.60	2.75	2.52	2.20	2.65	2.51	3.05	3.25	"Cash Flow" per sh
1.23	1.20	1.25	1.21	1.09	1.35	1.22	1.17	1.51	1.83	1.45	1.53	1.31	.94	1.25	1.21	1.60	1.70	Earnings per sh A
.80	.84	.87	.90	.93	.95	.99	1.02	1.04	1.06	1.07	1.09	1.10	1.12	1.12	1.12	1.13	1.13	Div'd Decl'd per sh B●
2.12	2.40	2.36	3.03	3.09	2.53	2.26	2.17	2.83	2.61	2.74	3.44	2.45	4.09	5.62	4.39	2.25	4.05	Cap'l Spending per sh
9.30	9.66	10.04	10.35	10.51	10.90	11.56	11.72	12.22	13.00	13.38	13.43	12.90	12.95	13.12	14.44	15.40	16.50	Book Value per sh C
11.34	11.36	11.36	11.38	11.38	11.38	12.49	12.53	12.62	12.62	12.62	12.64	16.15	15.16	15.16	16.53	16.70	16.60	Common Shs Outstg D
11.6	10.6	10.4	11.2	14.1	13.5	14.1	13.7	11.9	12.6	17.8	17.6	19.6	27.1	19.8	22.1	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio
.95	.80	.77	.72	.86	.80	.92	.92	.75	.73	.93	1.01	1.27	1.39	1.08	1.28			Relative P/E Ratio
5.7%	6.6%	6.7%	6.6%	6.1%	5.2%	5.8%	6.4%	5.8%	4.6%	4.2%	4.0%	4.3%	4.4%	4.5%	4.2%			Avg Ann'l Div'd Yield
157.3	165.1	162.6	195.3	166.3	206.4	244.8	246.6	253.2	277.1	320	345	Revenues ($mill)					450	
14.4	14.7	19.1	23.3	18.4	19.9	20.0	14.4	19.1	19.4	29.0	31.0	Net Profit ($mill)					45.0	
40.0%	40.1%	38.9%	37.4%	36.4%	37.9%	42.3%	39.4%	39.7%	39.9%	40.0%	40.0%	Income Tax Rate					40.0%	
---	---	---	---	---	---	---	---	---	---	---	NMF	AFUDC % to Net Profit					NMF	
46.6%	49.2%	47.4%	45.4%	44.2%	46.9%	48.5%	50.3%	55.3%	52.3%	50.0%	50.0%	Long-Term Debt Ratio					40.0%	
52.2%	49.7%	51.4%	53.6%	54.7%	52.0%	50.2%	48.8%	44.0%	47.0%	48.0%	48.0%	Common Equity Ratio					50.0%	
276.9	296.0	299.9	306.7	308.6	333.6	388.8	402.7	453.1	520.3	580	610	Total Capital ($mill)					840	
407.9	422.2	443.6	460.4	478.3	515.4	582.0	624.3	697.0	759.6	865	865	Net Plant ($mill)					985	
7.1%	6.8%	8.3%	9.4%	7.8%	7.8%	6.8%	6.3%	5.9%	6.6%	6.5%	7.0%	Return on Total Cap'l					7.0%	
9.7%	9.8%	12.1%	13.9%	10.7%	11.2%	10.0%	7.2%	9.4%	7.8%	8.5%	10.0%	Return on Shr. Equity					11.0%	
9.9%	9.9%	12.3%	14.1%	10.8%	11.4%	10.1%	7.2%	9.5%	7.9%	8.5%	10.0%	Return on Com Equity					11.0%	
1.9%	1.2%	3.8%	6.0%	2.8%	3.5%	1.8%	NMF	1.0%	.1%	3.0%	3.0%	Retained to Com Eq					5.5%	
81%	88%	69%	59%	74%	70%	82%	119%	90%	91%	71%	67%	All Div'ds to Net Prof					58%	

CAPITAL STRUCTURE as of 3/31/04
Total Debt $282.6 mill. Due in 5 Yrs: $10.7 mill.
LT Debt $272.0 mill. LT Interest $16.0 mill.

(LT Interest earned: 2.8x; total int. cov.: 2.7x)

Pension Assets-12/03 $88.4 mill. Oblig. $63.2 mill.
Pfd Stock $3.5 mill. Pfd Div'd 5.15 mill.
139,000 shares, 4.4% cumulative ($25 par).

Common Stock 16,932,046 shs.
as of 5/3/04
MARKET CAP: $450 million (Small Cap)

CURRENT POSITION ($MILL.)	2002	2003	3/31/04
Cash Assets	1.1	2.8	2.1
Other	41.9	40.6	41.4
Current Assets	43.0	43.5	43.5
Accts Payable	23.7	23.8	18.3
Debt Due	24.8	7.3	10.6
Other	43.0	32.5	36.6
Current Liab.	91.5	63.6	65.6
Fix.-Chg. Cov.	250%	218%	202%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	3.0%	2.0%	4.0%
"Cash Flow"	2.0%	-1.5%	8.5%
Earnings	-.5%	-6.5%	11.0%
Dividends	2.0%	1.0%	1.0%
Book Value	2.5%	1.0%	14.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	47.0	67.0	76.3	56.5	246.8
2002	51.7	69.2	81.4	60.9	263.2
2003	51.3	68.0	88.2	69.6	277.1
2004	60.2	77.8	100	82.0	320
2005	70.0	85.0	105	85.0	345

Calendar	EARNINGS PER SHARE A B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.01	.34	.39	.20	.94
2002	.12	.43	.50	.20	1.25
2003	d.05	.30	.53	.41	1.21
2004	.08	.41	.73	.38	1.60
2005	.11	.43	.76	.40	1.70

Calendar	QUARTERLY DIVIDENDS PAID B● Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.275	.275	.275	.275	1.10
2001	.279	.279	.279	.279	1.12
2002	.28	.28	.28	.28	1.12
2003	.281	.281	.281	.281	1.12
2004	.283	.283			

BUSINESS: California Water Service Group provides regulated and nonregulated water service to over 2 million people (461,200 customers) in 88 communities in California, Washington, and New Mexico. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired National Utility Company (5/04); Rio Grande Corp. (11/00). Revenue breakdown, '03: residential, 70%; business, 18%; public authorities, 5%; industrial, 4%; other, 3%. '03 reported depreciation rate: 2.2%. Has about 815 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson. Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwater.com.

California Water Service Group's results are improving. The company reported earnings of $0.08 a share in the first quarter, compared to a loss of $0.05 last year and our estimate of $0.03. The outperformance was revenue driven, as the firm's top line increased 17% on a year-over-year basis, due primarily to favorable rate increase rulings by the California Public Utility Commission (CPUC). Indeed, approximately $7 million of the top-line advance was a result of rate increases, with the majority stemming from the 2001 general rate case. On a down note, the higher water usage rate hurt CWT's operating margin, as it forced the company to purchase water to meet demand.

The fragmented industry is producing opportunities. In fact, CWT subsidiary New Mexico Water Service Company recently bought National Utility Company. National serves 700 customers next to New Mexico Water's Middle Rio Grande water system and 950 customers south of Albuquerque. The deal increases New Mexico Water's customer base by 40%.

A stock offering is likely. The company announced plans to sell 1.25 million shares of common stock at $27.25 a share in the second quarter. The nearly $34 million in proceeds are slated to be used to pay for the aforementioned purchase, escalating infrastructure costs, and additional acquisitions.

Favorable general rate case rulings augur well for California. The company received a $4.4 million step-rate increase in January, which likely went into effect during the second quarter. Plus, a decision on the 2002 general rate case was awarded by the CPUC in April, allowing for an increase of $3.6 million on an annualized basis. As such, we have added a dime onto our 2004 share-net call. Still,

These untimely shares offer little appeal at this time. Any gains we foresee from further CPUC rulings and the robust population growth of the state of California will likely be diluted by additional equity and debt offerings necessary to fund growing capital expenditures. However, CWT may be attractive to income-oriented investors because of its solid dividend yield.

Andre J. Costanzo *July 30, 2004*

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	80
Earnings Predictability	75

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; Q2 '02, 8¢. Next earnings report due late Oct.

(B) Dividends historically paid in mid-Feb., May, Aug., Nov. ■ Div'd reinvestment plan available.

(C) Incl. deferred charges. In '03: $38.0 mill. $2.25/sh.

(D) In millions, adjusted for split.

(E) May not total due to change in shares.

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-8), Page 10 of 12

MIDDLESEX WATER NDQ–MSEX

RECENT PRICE 17.66 | TRAILING P/E RATIO 29.9 | RELATIVE P/E RATIO 1.55 | DIV'D YLD 3.9% | VALUE LINE 4707

RANKS

PERFORMANCE 3 Average
Technical 3 Average
SAFETY 2 Above Average
BETA .60 (1.00 = Market)

Financial Strength B++
Price Stability 95
Price Growth Persistence 60
Earnings Predictability 70

LEGENDS
12 Mos Mov Avg
Rel Price Strength
3-for-2 split 1/02
4-for-3 split 11/03
Shaded area indicates recession

9.63 7.75 | 11.25 8.19 | 12.86 9.63 | 19.75 10.50 | 16.97 12.50 | 18.73 14.69 | 20.04 13.73 | 21.23 15.77 | 21.81 17.17 | High Low

© VALUE LINE PUBLISHING, INC.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
SALES PER SH	4.52	4.72	4.39	5.35	5.39	5.87	5.98	6.12	–	
"CASH FLOW" PER SH	.94	1.02	1.02	1.19	.99	1.18	1.20	1.15	–	.79[C]/NA[A,B]
EARNINGS PER SH	.60	.67	.71	.76	.51	.66	.73	.61	.67[A,B]	
DIV'DS DECL'D PER SH	.55	.57	.58	.60	.61	.62	.63	.65	–	
CAP'L SPENDING PER SH	.73	1.20	2.58	2.33	1.32	1.25	1.59	1.87	–	
BOOK VALUE PER SH	5.85	6.00	6.80	6.85	6.98	7.11	7.39	7.60	–	
COMMON SHS OUTST'G (MILL)	8.41	8.54	9.62	10.00	10.11	10.17	10.36	10.48	–	
AVG ANN'L P/E RATIO	14.4	13.4	15.2	17.6	28.7	24.6	23.5	30.0	20.3	22.4/NA
RELATIVE P/E RATIO	.90	.77	.79	1.00	1.87	1.28	1.28	1.72	–	
AVG ANN'L DIV'D YIELD	6.4%	6.3%	5.4%	4.4%	4.2%	3.8%	3.7%	3.5%	–	
SALES ($MILL)	38.0	40.3	43.1	53.5	54.5	59.6	61.9	64.1	–	
OPERATING MARGIN	36.0%	37.2%	37.0%	39.9%	32.2%	47.2%	47.1%	44.0%	–	
DEPRECIATION ($MILL)	2.9	3.1	3.8	4.3	4.9	5.3	5.0	5.6	–	
NET PROFIT ($MILL)	5.2	5.9	6.5	7.9	5.3	7.0	7.8	6.6	–	
INCOME TAX RATE	32.8%	34.5%	31.5%	28.8%	33.1%	34.8%	33.3%	32.8%	–	
NET PROFIT MARGIN	13.6%	14.5%	15.1%	14.7%	9.7%	11.7%	12.5%	10.3%	–	
WORKING CAP'L ($MILL)	2.0	d2.9	14.6	6.8	d2.7	d.9	d9.3	d13.3	–	
LONG-TERM DEBT ($MILL)	53.0	52.9	78.0	82.3	81.1	88.1	87.5	97.4	–	
SHR. EQUITY ($MILL)	51.9	56.2	71.7	74.6	74.7	76.4	80.6	83.7	–	
RETURN ON TOTAL CAP'L	5.4%	6.8%	5.7%	6.4%	4.9%	5.6%	6.0%	5.0%	–	
RETURN ON SHR. EQUITY	10.0%	10.4%	9.1%	10.6%	7.1%	9.1%	9.6%	7.9%	–	
RETAINED TO COM EQ	3%	1.7%	1.8%	2.5%	NMF	5%	1.3%	NMF	–	
ALL DIV'DS TO NET PROF	92%	85%	81%	78%	121%	94%	87%	105%	–	

Bold figures are consensus earnings estimates and using the recent price/P/E ratios.

[A] No. of analysts changing earn. est. in last 17 days: 0 up, 0 down, consensus 5-year earnings growth 6.0% per year. [B] Based upon 2 analysts' estimates. [C] Based upon one analyst's estimate.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Sales	5.5%	2.5%
"Cash Flow"	3.5%	5.0%
Earnings	0.5%	-16.0%
Dividends	2.5%	2.5%
Book Value	3.5%	3.0%

Fiscal Year	QUARTERLY SALES ($mill) 1Q	2Q	3Q	4Q	Full Year
12/31/02	14.3	15.5	17.0	15.1	61.9
12/31/03	15.0	16.0	17.5	15.5	64.1
12/31/04	15.9				
12/31/05					

Fiscal Year	EARNINGS PER SHARE 1Q	2Q	3Q	4Q	Full Year
12/31/01	.08	.18	.23	.17	.66
12/31/02	.12	.18	.24	.19	.73
12/31/03	.11	.17	.22	.11	.61
12/31/04	.09	.23	.27	.18	
12/31/05					

Calendar	QUARTERLY DIVIDENDS PAID 1Q	2Q	3Q	4Q	Full Year
2001	.155	.155	.155	.158	.62
2002	.158	.158	.158	.161	.64
2003	.161	.161	.161	.165	.65
2004	.165	.165			

INSTITUTIONAL DECISIONS

	3Q'03	4Q'03	1Q'04
to Buy	18	24	17
to Sell	12	14	15
Hld's(000)	1631	1705	1748

ASSETS ($mill.)	2002	2003	3/31/04
Cash Assets	2.9	3.0	3.3
Receivables	9.2	5.7	9.1
Inventory (Avg cost)	1.2	1.4	1.5
Other	7.0	4.3	.9
Current Assets	20.3	14.4	14.9
Property, Plant & Equip, at cost	259.3	278.4	
Accum Depreciation	47.9	47.5	
Net Property	211.4	230.9	232.7
Other	12.9	17.9	17.8
Total Assets	244.6	263.2	265.4
LIABILITIES ($mill.)			
Accts Payable	2.1	4.8	4.2
Debt Due	16.3	13.6	14.5
Other	9.2	9.3	10.5
Current Liab	29.6	27.7	29.2

LONG-TERM DEBT AND EQUITY as of 3/31/04

Total Debt $112.8 mill. Due in 5 Yrs. NA
LT Debt $98.3 mill. Including Cap. Leases NA (54% of Cap'l)
Leases, Uncapitalized Annual rentals NA

Pension Liability $5.1 mill. in '03 vs. $5.3 mill. in '02

Pfd Stock $4.1 mill. Pfd Div'd Paid $.3 mill. (2% of Cap'l)

Common Stock 10,529,947 shares (44% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: Middlesex Water Company, through its subsidiaries, engages in the ownership and operation of regulated water utility systems in central and southern New Jersey, and in Delaware, as well as a regulated wastewater utility in southern New Jersey. Its New Jersey water utility system (the Middlesex System) provides water services to retail customers in central New Jersey. The Middlesex System also provides water service under contract to municipalities in central New Jersey. The company operates the water supply system and wastewater system for the city of Perth Amboy in New Jersey in partnership with its subsidiary, Utility Service Affiliates (Perth Amboy), Inc. Its other New Jersey subsidiaries provide water and wastewater services to residents in Southampton Township. The company's Delaware subsidiaries comprising Tidewater Utilities, Inc. and Southern Shores Water Company, LLC offer water services to retail customers in New Castle, Kent, and Sussex Counties. Has 209 employees. C.E.O. & President: J. Richard Tompkins. Inc.: NJ Address: 1500 Ronson Road, Iselin, NJ 08830 Tel.: (732) 634-1500 Internet: http://www.middlesexwater.com. A.Z.

July 30, 2004

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 6/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-5.43%	-2.79%	6.05%	26.42%	85.80%

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-8), Page 11 of 12

YORK WATER CO NDQ-YORW

RECENT PRICE 17.40 | TRAILING P/E RATIO 21.0 | RELATIVE P/E RATIO 1.08 | DIV'D YLD 3.2% | VALUE LINE 4710

RANKS

PERFORMANCE 1 Highest
Technical 3 Average
SAFETY 3 Average
BETA .55 (1.00 = Market)

Financial Strength B+
Price Stability 70
Price Growth Persistence NMF
Earnings Predictability NMF

LEGENDS
12 Mos Mov Avg
Rel Price Strength
2-for-1 split 6/02
Shaded area indicates recession

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
© VALUE LINE PUBLISHING, INC.											
REVENUES PER SH	–	–	–	–	–	6.07	3.08	3.07	3.25	–	
"CASH FLOW" PER SH	–	–	–	–	–	1.79	.88	.86	.97	–	
EARNINGS PER SH	–	–	–	–	–	1.24	.55	.80	.70	.74[A,B]	.77/NA
DIV'D DECL'D PER SH	–	–	–	–	–	.98	.51	.53	.55	–	
CAP'L SPENDING PER SH	–	–	–	–	–	2.11	1.12	.99	1.61	–	
BOOK VALUE PER SH	–	–	–	–	–	10.66	5.69	5.85	5.09	–	
COMMON SHS OUTST'G (MILL)	–	–	–	–	–	3.04	6.31	6.36	6.42	–	
AVG ANN'L P/E RATIO	–	–	–	–	–	–	17.9	26.9	24.5	23.5	22.6/NA
RELATIVE P/E RATIO	–	–	–	–	–	–	.92	1.47	1.40	–	.9N
AVG ANN'L DIV'D YIELD	–	–	–	–	–	–	4.3%	3.3%	3.2%	–	
REVENUES ($MILL)	–	–	–	–	–	18.5	19.4	19.6	20.9	–	
NET PROFIT ($MILL)	–	–	–	–	–	3.8	4.0	3.8	4.4	–	
INCOME TAX RATE	–	–	–	–	–	35.7%	35.8%	34.9%	34.8%	–	
AFUDC % TO NET PROFIT	–	–	–	–	–	1.5%	2.2%	3.7%	–	–	
LONG-TERM DEBT RATIO	–	–	–	–	–	50.2%	47.7%	46.7%	43.4%	–	
COMMON EQUITY RATIO	–	–	–	–	–	49.8%	52.3%	53.3%	56.6%	–	
TOTAL CAPITAL ($MILL)	–	–	–	–	–	65.2	68.6	69.9	69.0	–	
NET PLANT ($MILL)	–	–	–	–	–	97.0	102.3	106.7	116.5	–	
RETURN ON TOTAL CAP'L	–	–	–	–	–	7.9%	7.9%	7.4%	8.5%	–	
RETURN ON SHR. EQUITY	–	–	–	–	–	11.6%	11.2%	10.2%	11.4%	–	
RETURN ON COM EQUITY	–	–	–	–	–	11.5%	11.2%	10.2%	11.4%	–	
RETAINED TO COM EQ	–	–	–	–	–	2.5%	2.5%	1.3%	2.5%	–	
ALL DIV'DS TO NET PROF	–	–	–	–	–	78%	78%	88%	77%	–	

High / Low

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
						15.33 / 8.50	20.17 / 12.30	20.23 / 14.00	21.04 / 17.40		

Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.

(A) No. of analysts changing earn. est. in last 13 days: 0 up, 0 down. (B) Previous 5-year earnings growth 7.0% per year. (C) Based upon 2 analysts' estimates. (D) Based upon one analyst's estimate.

ANNUAL RATES of change (per share)

	5 Yrs.	1 Yr.
Revenues	6.0%	
"Cash Flow"	13.0%	
Earnings	16.5%	
Dividends	5.0%	
Book Value	4.0%	

QUARTERLY SALES ($mill.)

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/02	4.7	4.9	5.3	4.7	19.5
12/31/03	4.8	5.0	5.8	5.3	20.9
12/31/04	5.4				
12/31/05					

EARNINGS PER SHARE

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/01	.13	.14	.23	.15	.65
12/31/02	.14	.15	.18	.13	.60
12/31/03	.12	.16	.24	.18	.70
12/31/04	.25	.16	.25	.16	
12/31/05					

QUARTERLY DIVIDENDS PAID

Calendar	1Q	2Q	3Q	4Q	Full Year
2001	.125	.125	.125	.125	.50
2002	.13	.13	.13	.13	.52
2003	.135	.135	.135	.135	.54
2004	.145	.145	.145		

INSTITUTIONAL DECISIONS

	3Q'03	4Q'03	1Q'04
to Buy	3	5	2
to Sell	8	4	4
Hld's(000)	678	693	661

ASSETS ($mill.)	2002	2003	3/31/04
Cash Assets	.0	.0	.0
Receivables	2.8	3.2	3.0
Inventory	.5	.5	.6
Other	.4	.3	.5
Current Assets	3.7	4.1	4.1
Property, Plant & Equip. at cost	127.7	139.1	
Accum Depreciation	21.0	22.6	
Net Property	106.7	116.5	122.5
Other	8.0	6.9	6.9
Total Assets	118.4	127.5	133.5
LIABILITIES ($mill.)			
Accts Payable	.7	1.7	2.9
Debt Due	2.8	9.9	12.5
Other	2.0	2.4	2.5
Current Liab.	5.5	14.0	17.9

LONG-TERM DEBT AND EQUITY as of 3/31/04

Total Debt $42.4 mill. Due in 5 Yrs. NA
LT Debt $29.9 mill. Including Cap. Leases NA (43% of Cap'l)
Leases; Uncapitalized Annual rentals NA

Pension Liability None in '03 vs. $1.7 mill. in '02

Pfd Stock None Pfd Div'd Paid None

Common Stock 6,430,836 shares (57% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: York Water Company engages in the impounding, purification, and distribution of water in York County, Pennsylvania. The company has two reservoirs, Lake Williams and Lake Redman, which together hold up to 2.75 billion gallons of water. It supplies water for domestic, commercial, industrial, and fire protection purposes. The company serves approximately 156,000 people in 33 municipalities in York County, Pennsylvania. It supplies through the company's own distribution system to the city of York; the boroughs of North York; West York; Manchester; Mount Wolf; New Salem; Hallam; Jacobus; Loganville; Yorkana; Seven Valleys; East Prospect; Jefferson; Glen Rock; New Freedom, Railroad; and portions of the townships of Manchester, East Manchester, West Manchester, North Codorus, Shrewsbury, North Hopewell, Hopewell, Springettsbury, Spring Garden, Conewago, Springfield, York; Hellam; Windsor, Lower Windsor, Dover, and Jackson. Has 92 employees. C.E.O. & President: William Morris. Inc.: PA. Address: 130 East Market Street, York, PA 17401. Tel.: (717) 845-3601. Internet: http://www.yorkwater.com. A.Z.

July 30, 2004

TOTAL SHAREHOLDER RETURN

Dividends plus appreciation as of 6/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-8.75%	2.80%	17.00%	64.26%	113.21%

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-8), Page 12 of 12

United Water Idaho, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Six C. A Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies
1	Prospective Yield on Aaa Rated Corporate Bonds (1)	6.3 %	6.3 %
2	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.5 (2)	0.5 (2)
3	Adjusted Prospective Yield on A Rated Public Utility Bonds	6.8 %	6.8 %
4	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.0 (3)	0.0 (3)
5	Adjusted Prospective Bond Yield	6.8	6.8
6	Equity Risk Premium (4)	4.2	4.4
7	Risk Premium Derived Common Equity Cost Rate	11.0 %	11.2 %

Notes:
(1) Derived in Note (3) on page 6 of this Schedule
(2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.46%, rounded to 0.5% from page 4 of this Schedule
(3) No adjustment necessary as the average Moody's bond rating of the proxy group is A2.
(4) From page 5 of this Schedule.

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 1 of 9

United Water Idaho, Inc.
Comparison of Bond Ratings and Business Profile for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

	September 2004 Moody's Bond Rating		September 2004 Standard & Poor's Bond Rating				Standard & Poor's Business Position / Profile (2)
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	Credit Rating	Numerical Weighting (1)	
Proxy Group of Six C. A. Turner Water Companies							
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
Artesian Resources, Inc.	NR	--	NR	--	NR	--	--
California Water Service Group (5)	A2	6	NR	--	A+	5	3.0
Middlesex Water Company	NR	--	A+	5	A	6	3.0
York Water Company	NR	--	NR	--	A+	5	2.0
Average	A2	6.0	A+	5.3	A+	5.6	2.6
Proxy Group of Three Value Line (Standard Edition) Water							
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
California Water Service Group (5)	A2	6	NR	--	A+	5	3.0
Average	A2	6.0	A+ / A	5.5	A	5.7	2.7

Notes:
(1) From page 3 of this Schedule.
(2) From Standard & Poor's Utilities & Perspectives, Global Utilities Ratings Service, Vol. 13, No. 41, October 11, 2004.
(3) Ratings and business profile are those of Southern California Water Company
(4) Formerly Philadelphia Suburban Corp. Ratings and business profile are those of Aqua Pennsylvania, Inc. (formerly Pennsylvania Suburban Water Company).
(5) Ratings and business profile is that of California Water Service Company.

Source of Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 2 of 9

United Water Idaho, Inc.
Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 3 of 9

Moody's
Comparison of Interest Rate Trends
for the Three Months Ending August 2004 (1)

Years	Corporate Bonds Aaa Rated	Public Utility Bonds Aa Rated	Public Utility Bonds A Rated	Public Utility Bonds Baa Rated	Spread - Corporate v. Public Utility Bonds Aa (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds A (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds Baa (Pub. Util.) over Aaa (Corp.)	Spread - Public Utility Bonds A over Aa	Spread - Public Utility Bonds Baa over A
June-04	6.01 %	6.30 %	6.46 %	6.84 %					
July-04	5.82	6.09	6.27	6.67					
August-04	5.65	5.95	6.14	6.45					
Average of Last 3 Months	5.83 %	6.11 %	6.29 %	6.65 %	0.28 %	0.46 %	0.82 %	0.18 %	0.36 %
Average Spread (2)					0.28 %	0.46 %	0.82 %	0.18 %	0.36 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record , September 2004, Vol. 71, No. 9

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 4 of 9

United Water Idaho, Inc.
Judgment of Equity Risk Premium for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies
1	Calculated equity risk premium based on the total market using the beta approach (1)	4.2 %	4.5
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	4.2	4.2
3.	Average equity risk premium	4.2 %	4.4 %

Notes: (1) From page 6 of this Schedule.
(2) From page 8 of this Schedule.

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 5 of 9

United Water Idaho, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies
1	Arithmetic mean total return rate on the Standard & Poor's 500 Composite Index - 1926-2003 (1)	12.4 %	12.4 %
2	Arithmetic mean total return rate on Aaa and Aa Corporate Bonds 1926-2003 (2)	(6.1)	(6.1)
3	Historical Equity Risk Premium	6.3 %	6.3 %
4	Forecasted 3-5 year Total Annual Market Return (3)	12.7 %	12.7 %
5	Prospective Yield an Aaa Rated Corporate Bonds (4)	(6.3)	(6.3)
6	Forecasted Equity Risk Premium	6.4 %	6.4 %
7	Average of Historical and Forecasted Equity Risk Premium (5)	6.4 %	6.4 %
8	Adjusted Value Line Beta (6)	0.65	0.70
9	Beta Adjusted Equity Risk Premium	4.2 %	4.5 %

Notes:
(1) From Stocks, Bonds, Bills and Inflation - 2004 Yearbook Valuation Edition, Ibbotson Associates, Inc., Chicago, IL, 2004.
(2) From Moody's Industrial Manual and Mergent Bond Record Monthly Update
(3) From Note 1, page 3 of Schedule (PMA-10) of this Exhibit.
(4) Average forecast based upon six quarterly estimates of Aaa rated corporate bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated October 1, 2004 (see page 7 of this Schedule). The estimates are detailed below

Fourth Quarter 2004	5.8 %
First Quarter 2005	6.0
Second Quarter 2005	6.2
Third Quarter 2005	6.4
Fourth Quarter 2005	6.5
First Quarter 2006	6.6
Average	6.3 %

(5) Average of the Historical Equity Risk Premium of 6.3% from Line No. 3 and the Forecasted Equity Risk Premium of 6.4% from Line No. 6 ((6.3% + 6.4%) / 2 = 6.35%, rounded to 6.4%).
(5) From page 9 of this Schedule

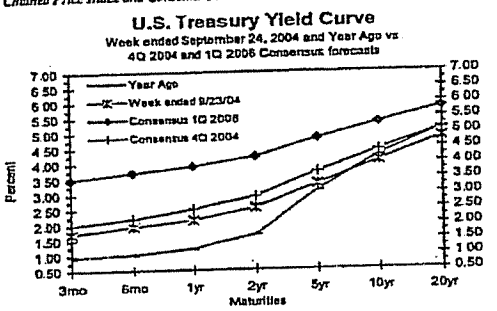
Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 6 of 9

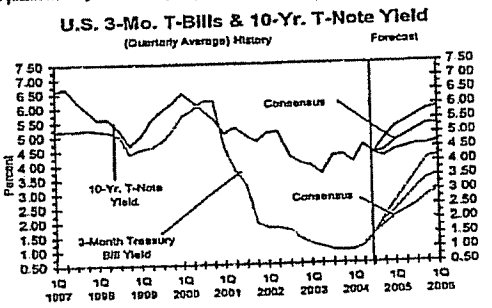
Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

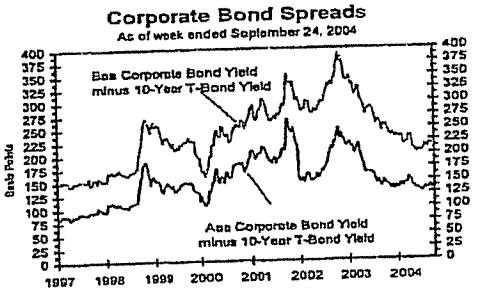
	History							Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			4Q	1Q	2Q	3Q	4Q	1Q
Interest Rates	Sep.24	Sep.17	Sep.10	Sep.3	Aug.	July	June	3Q 2004*	2004	2005	2005	2005	2006
Federal Funds Rate	1.64	1.49	1.50	1.53	1.43	1.26	1.03	*1.41*	1.9	2.3	2.7	3.1	3.4	3.6
Prime Rate	4.57	4.50	4.50	4.50	4.42	4.25	4.00	*4.40*	4.9	5.3	5.7	6.1	6.4	6.6
LIBOR, 3-mo.	1.92	1.89	1.86	1.81	1.73	1.63	1.49	*1.74*	2.2	2.5	2.9	3.3	3.6	3.8
Commercial Paper, 1-mo.	1.72	1.67	1.61	1.53	1.48	1.29	1.13	*1.47*	2.0	2.4	2.7	3.1	3.5	3.6
Treasury bill, 3-mo.	1.72	1.67	1.65	1.61	1.50	1.36	1.29	*1.51*	2.0	2.3	2.7	3.1	3.4	3.5
Treasury bill, 6-mo	1.94	1.88	1.89	1.82	1.76	1.70	1.64	*1.78*	2.2	2.5	2.9	3.2	3.5	3.7
Treasury bill, 1 yr.	2.14	2.09	2.10	2.03	2.02	2.10	2.12	*2.07*	2.5	2.8	3.2	3.5	3.8	3.9
Treasury note, 2 yr.	2.53	2.49	2.52	2.47	2.51	2.64	2.76	*2.55*	2.9	3.3	3.6	3.9	4.1	4.2
Treasury note, 5 yr.	3.29	3.35	3.42	3.39	3.47	3.69	3.93	*3.51*	3.7	4.1	4.3	4.6	4.7	4.8
Treasury note, 10 yr.	4.04	4.14	4.21	4.19	4.28	4.50	4.73	*4.31*	4.4	4.7	4.9	5.1	5.3	5.3
Treasury note, 20 yr.	4.80	4.92	4.99	4.98	5.07	5.24	5.45	*5.08*	5.1	5.4	5.5	5.6	5.7	5.8
Corporate Aaa bond	5.37	5.48	5.54	5.55	5.65	5.82	6.01	*5.65*	5.8	6.0	6.2	6.4	6.5	6.6
Corporate Baa bond	6.17	6.29	6.36	6.37	6.46	6.62	6.78	*6.46*	6.5	6.8	6.9	7.1	7.2	7.3
State & Local bonds	4.46	4.54	4.61	4.63	4.70	4.87	5.05	*4.71*	4.8	4.9	5.1	5.2	5.3	5.4
Home mortgage rate	5.70	5.75	5.83	5.77	5.87	6.06	6.29	*5.90*	6.0	6.2	6.4	6.6	6.7	6.8

	History								Consensus Forecasts-Quarterly Avg.					
	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
Key Assumptions	2002	2003	2003	2003	2003	2004	2004	2004*	2004	2005	2005	2005	2005	2006
Major Currency Index	100.0	95.1	90.8	90.7	87.8	85.3	88.0	*86.5*	86.4	86.6	86.0	85.9	86.0	86.4
Real GDP	0.7	1.9	4.1	7.4	4.2	4.5	2.8	*3.6*	3.9	3.6	3.6	3.5	3.4	3.3
GDP Price Index	2.0	2.7	1.1	1.4	1.6	2.8	3.2	*2.0*	2.0	2.1	2.1	2.1	2.1	2.3
Consumer Price Index	2.0	3.8	0.7	2.4	0.7	3.5	4.8	*2.3*	2.3	2.4	2.4	2.4	2.5	2.5

[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). **Interest rate data for 3Q 2004 based on historical data through the week ended September 24. Figures shown for 3Q 2004 Real GDP, GDP Chained Price Index and Consumer Price Index are consensus forecasts based on a special question survey this month of the panel members. Data for 3Q 2004 Major Currency Index also is based on data through week ended September 24.*







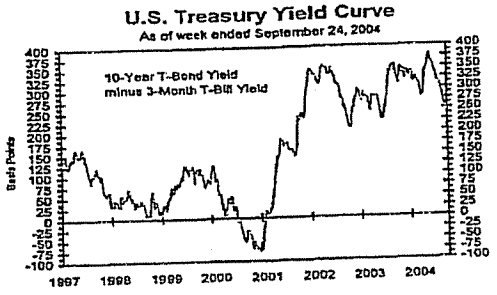


Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 7 of 9

United Water Idaho, Inc.
Derivation of Mean Equity Risk Premium Based on a Study
Using Holding Period Returns of Public Utilities

Line No.		Over A Rated Public Utility Bonds AUS Consultants - Utility Services Study (1) 1
Time Period		1928-2003
1	Arithmetic Mean Holding Period Returns (2): Standard & Poor's Public Utility Index	10 8 %
2	Arithmetic Mean Yield on: A Rated Public Utility Bonds	(6.6)
3	Equity Risk Premium	4.2 %

Notes: (1) S&P Public Utility Index and Moody's Pubilc Utility Bond Average Annual Yields 1928-2003, (US Consultants - Utility Services, 2004)

(2) Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 8 of 9

United Water Idaho, Inc.
Value Line Adjusted Betas for
the Proxy Group of Six C A Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

	Value Line Adjusted Beta
Proxy Group of Six C. A Turner Water Companies	
American States Water Co	0 65
Aqua America, Inc	0 75
Artesian Resources Corp	NA
California Water Service Group	0 70
Middlesex Water Company	0 60
York Water Company	0.55
Average	0.65
Proxy Group of Three Value Line (Standard Edition) Water	
American States Water Co	0.65
Aqua America, Inc	0.75
California Water Service Group	0.70
Average	0.70

NA = Not Available

Source of Information: Value Line Investment Survey,
July 30, 2004

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 9 of 9

United Water Idaho, Inc.
of the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies
		Traditional Capital Asset Pricing Model	
1	Risk-Free Rate (1)	5.5 %	5.5 %
2	Average Company-Specific Market Premium (2)	4.7	5.0
3	Capital Asset Pricing Model Derived Company Equity Cost Rate	10.2 %	10.5 %
		Empirical Capital Asset Pricing Model	
4	Risk-Free Rate (1)	5.5 %	5.5 %
5	Average Company-Specific Market Premium (2)	5.3	5.6
6	Capital Asset Pricing Model Derived Company Equity Cost Rate	10.8 %	11.1 %
7	Conclusion	10.5 %	10.8 %

Notes: (1) Developed in note 2 of page 3 of this Schedule.
(2) Developed on page 2 of this Schedule

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-10), Page 1 of 3

United Water Idaho, Inc.
Indicated Common Equity Cost Rate Through Use
of the Capital Asset Pricing Model

	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 7.2% (1)	CAPM Result Including Risk-Free Rate of 5.5% (2)
Traditional Capital Asset Pricing Model (3)			
Proxy Group of Six C A Turner Water Companies			
American States Water Co	0.65	4.7 %	10.2 %
Aqua America, Inc.	0.75	5.4	10.9
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.70	5.0	10.5
Middlesex Water Company	0.60	4.3	9.8
York Water Company	0.55	4.0	9.5
Average	0.65	4.7 %	10.2 % (3)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co	0.65	4.7 %	10.2 %
Aqua America, Inc	0.75	5.4	10.9
California Water Service Group	0.70	5.0	10.5
Average	0.70	5.0 %	10.5 % (3)
Empirical Capital Asset Pricing Model (5)			
Proxy Group of Six C A Turner Water Companies			
American States Water Co	0.65	5.3 %	10.8 %
Aqua America, Inc	0.75	5.9	11.4
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.70	5.6	11.1
Middlesex Water Company	0.60	5.0	10.5
York Water Company	0.55	4.8	10.3
Average	0.65	5.3 %	10.8 % (3)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	0.65	5.3 %	10.8 %
Aqua America, Inc	0.75	5.9	11.4
California Water Service Group	0.70	5.6	11.1
	0.70	5.6 %	11.1 % (3)

See page 3 for notes.

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-10), Page 2 of 3

United Water Idaho, Inc.
Development of the Market-Required Rate of Return on Common Equity Using
the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies
Adjusted to Reflect a Forecasted Risk-Free Rate and Market Return

Notes:

(1) From the three previous month-end (Jul. '04 -- Aug. '04), as well as a recently available (Oct. 1, 2004), Value Line Summary & Index, a forecasted 3-5 year total annual market return of 12.7% can be derived by averaging the 3-month and spot forecasted total 3-5 year total appreciation, converting it into an annual market appreciation and adding the Value Line average forecasted annual dividend yield

The 3-5 year average total market appreciation of 52% produces a four-year average annual return of 11.04% ($(1.52^{25}) - 1$). When the average annual forecasted dividend yield of 1.70% is added, a total average market return of 12.74%, rounded to 12.7%, (1.70% + 11.04%) is derived

The 3-month and spot forecasted total market return of 12.7% minus the risk-free rate of 5.5% (developed in Note 2) is 7.2% (12.7% - 5.5%). The Ibbotson Associates calculated market premium of 7.2% for the period 1926-2003 results from a total market return of 12.4% less the average income return on long-term U.S. Government Securities of 5.2% (12.4% - 5.2% = 7.2%). This is then averaged with the 7.2% Value Line market premium resulting in a 7.2% market premium. The 7.2% market premium is then multiplied by the beta in column 1 of page 2 of this Schedule

(2) Average forecast based upon six quarterly estimates of 20-year Treasury Bond yields per the consensus of nearly 50 economists reported in the Blue Chip Financial Forecasts dated October 1, 2004 (see page 7 of Schedule (PMA-9)) The estimates are detailed below:

	20-Year Treasury Bond Yield
Fourth Quarter 2004	5.1%
First Quarter 2005	5.4
Second Quarter 2005	5.5
Third Quarter 2005	5.6
Fourth Quarter 2005	5.7
First Quarter 2006	5.8
Average	5.5%

(3) The traditional Capital Asset Pricing Model (CAPM) is applied using the following formula:

$R_S = R_F + \beta (R_M - R_F)$

Where R_S = Return rate of common stock
R_F = Risk Free Rate
β = Value Line Adjusted Beta
R_M = Return on the market as a whole

(4) Includes only those indicated common equity cost rates which are above 8.8%, i.e., 200 basis points above the prospective yield of 6.8% on A rated Moody's public utility bonds (from page 1 of Schedule (PMA-9))

(5) The empirical CAPM is applied using the following formula:

$R_S = R_F + .25 (R_M - R_F) + .75 \beta (R_M - R_F)$

Where R_S = Return rate of common stock
R_F = Risk-Free Rate
β = Value Line Adjusted Beta
R_M = Return on the market as a whole

Source of Information:
Value Line Summary & Index
Blue Chip Financial Forecasts, October 1, 2004
Value Line Investment Survey, July 30, 2004, Standard Edition and Small and Mid-Cap Edition
Stocks, Bonds, Bills and Inflation – Valuation Edition 2004 Yearbook.
Ibbotson Associates, Inc., Chicago, IL

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-10), Page 3 of 3

United Water Idaho, Inc.
Comparable Earnings Analysis
for a Proxy Group of Ninety-Nine Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (6)

Proxy Group of Ninety-Nine Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (6)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth								
										5-year Average (2)		5-Year Projected (3)	
					1999	2000	2001	2002	2003	Percent	Student's T-Test	Percent	Student's T-Test
21st Century Ins. Group	0.65	0.73	4.1045	0.1083	12.1 %	1.9 %	3.7 %	7.4 %	8.5 %	6.7 %	(0.67)	13.0 %	(0.54)
ABM Industries Inc.	0.70	0.51	3.8382	0.0994	14.0	13.7	12.5	12.1	8.2	12.1	(0.52)	13.5	(0.47)
Abbott Labs.	0.60	0.64	4.0020	0.1036	34.7	32.5	32.5	30.4	26.6	31.3	0.75	20.5	0.56
Albemarle Corp.	0.65	0.77	3.1649	0.0819	16.6	17.2	11.7	11.7	12.6	14.0	(0.39)	13.0	(0.54)
Allied Capital Corp.	0.65	0.76	3.6577	0.0947	14.6	13.8	14.8	14.7	10.0	13.6	(0.42)	19.0	0.34
Amerada Hess	0.60	0.78	4.0009	0.1036	10.1	29.4	19.3	12.8	9.5	15.4	(0.30)	8.5	(1.21)
Anheuser-Busch	0.60	0.36	3.2183	0.0833	35.8	37.5	42.0	63.4	76.6	51.1 (4)	2.07	35.0 (4)	2.69
Annaly Mortgage Mgmt.	0.65	0.46	3.5841	0.0923	17.6	12.2	13.8	20.3	15.7	15.9	(0.26)	15.5	(0.18)
Applied Indl Techn.	0.75	0.56	3.9603	0.1025	6.8	10.4	8.0	4.9	5.9	7.4	(0.93)	10.5	(0.91)
Archer Daniels Midld	0.70	0.54	3.7599	0.0973	4.5	4.9	6.1	6.8	6.2	5.7	(0.84)	9.0	(1.13)
Arrow Int'l	0.60	0.33	3.9025	0.1010	15.8	17.0	14.3	13.1	13.3	14.7	(0.34)	13.0	(0.54)
Ball Corp.	0.65	0.73	3.9152	0.1014	15.1	16.8	21.0	32.3	29.4	22.9	0.20	26.0	1.37
Bandag Inc.	0.60	0.62	4.0361	0.1045	13.2	12.7	8.5	11.1	12.6	11.6	(0.55)	13.0	(0.54)
Bard (C.R.)	0.75	0.59	3.7710	0.0976	20.5	20.4	18.2	20.1	18.5	19.7	(0.01)	22.0	0.78
Barnes Group	0.75	0.60	3.8747	0.1003	15.8	17.7	9.8	13.0	10.3	13.3	(0.44)	14.0	(0.40)
Beckman Coulter	0.60	0.38	4.0464	0.1047	46.5	36.5	27.3	26.9	20.3	31.5	0.77	14.0	(0.40)
Becton Dickinson	0.75	0.61	3.9551	0.1024	21.8	20.1	18.8	19.3	19.8	19.9	0.00	17.0	0.04
Berry Petroleum 'A'	0.70	0.48	3.9777	0.1030	15.5	25.6	14.3	17.5	17.5	18.1	(0.12)	12.0	(0.69)
Blyth Inc.	0.75	0.59	4.0458	0.1047	24.3	23.0	16.5	16.9	17.0	19.5	(0.03)	14.5	(0.32)
Bob Evans Farms	0.65	0.72	3.8148	0.1013	12.3	11.1	12.5	13.4	11.4	12.1	(0.52)	12.0	(0.69)
CLARCOR Inc.	0.65	0.71	3.7284	0.0965	16.8	16.6	15.3	14.8	14.7	15.6	(0.28)	13.5	(0.47)
ChoicePoint Inc.	0.65	0.75	4.0305	0.1043	19.1	16.1	16.3	19.1	16.1	17.3	(0.17)	16.0	(0.10)
City National Corp.	0.60	0.79	3.3312	0.0862	18.9	17.7	16.4	16.3	15.3	16.9	(0.20)	14.0	(0.40)
Coca-Cola	0.65	0.41	3.8732	0.1003	34.0	39.4	35.0	34.7	34.0	35.4	1.03	33.5 (4)	2.47
Commercial Metals	0.60	0.81	4.0341	0.1044	11.3	11.0	5.6	8.1	3.7	7.9	(0.78)	14.5	(0.32)
ConAgra Foods	0.70	0.52	3.5737	0.0912	23.8	27.0	17.1	18.2	18.2	20.9	0.07	18.0	0.19
ConocoPhillips	0.65	0.76	3.1745	0.0822	10.5	28.4	11.4	5.1	13.4	13.8	(0.40)	8.0	(1.28)
Corn Products Int'l	0.75	0.62	3.7803	0.0981	7.8	8.4	6.7	7.6	8.3	7.3	(0.83)	10.0	(0.99)
Curtiss-Wright	0.70	0.48	3.5467	0.0918	12.3	13.1	11.6	10.1	10.9	11.6	(0.55)	12.5	(0.62)
Dean Foods	0.65	0.40	3.4581	0.0895	20.5	20.1	8.5	17.0	12.6	15.7	(0.28)	11.0	(0.84)
Dentsply Int'l	0.70	0.54	3.3077	0.0856	19.2	19.4	18.0	17.5	15.4	17.9	(0.13)	13.5	(0.47)
Donaldson Co.	0.60	0.81	3.6120	0.0935	23.8	25.1	23.7	22.7	21.3	23.3	0.23	20.0	0.49
Federated Investors	0.60	0.82	3.8584	0.0999	104.4	105.1	72.6	59.6	51.7	78.8 (4)	3.80	29.5	1.88
Ferro Corp.	0.90	0.60	3.5596	0.0921	24.6	23.7	13.0	8.5	9.4	15.0	(0.32)	10.5	(0.91)
Fortune Brands	0.65	0.72	3.6381	0.0942	12.4	17.1	17.8	21.2	20.9	17.9	(0.13)	18.0	0.19
Franklin Electric	0.65	0.41	3.8328	0.0992	27.8	20.9	22.0	21.0	17.9	21.9	0.13	17.5	0.12
Gen'l Dynamics	0.75	0.62	3.9823	0.1033	22.5	23.6	20.8	20.2	16.7	20.8	0.08	15.0	(0.25)
Gillette	0.65	0.47	3.9984	0.1035	41.2	65.0	48.9	53.5	61.8	54.1 (4)	2.26	39.5 (4)	3.35
Golden West Fin'l	0.85	0.75	3.5952	0.0931	13.0	10.7	11.6	16.1	16.0	14.0	(0.39)	18.0	0.19
HON Industries Inc.	0.65	0.74	3.8729	0.0951	19.8	18.5	15.2	14.1	13.8	16.3	(0.24)	19.0	0.34
Harland (John H.)	0.70	0.50	4.0667	0.1053	25.3	16.7	19.3	22.4	22.0	21.1	0.08	15.5	(0.16)
Harte-Hanks	0.60	0.86	3.2423	0.0839	12.8	14.9	14.4	17.0	15.7	14.9	(0.33)	18.0	0.19
Hillenbrand Inds.	0.60	0.67	3.4433	0.0891	17.7	18.7	17.7	19.8	21.1	19.0	(0.05)	21.0	0.83
IHOP Corp.	0.65	0.76	3.6911	0.0953	14.2	13.8	12.8	11.2	11.1	12.6	(0.48)	12.0	(0.69)
Int'l Flavors & Frag.	0.75	0.59	3.7525	0.0971	22.0	23.7	25.8	32.0	26.8	26.1	0.41	20.5	0.56
Invacare Corp.	0.60	0.67	3.8811	0.1000	15.8	15.1	15.8	13.5	11.8	14.4	(0.38)	12.5	(0.62)
Johnson & Johnson	0.65	0.46	3.2778	0.0849	28.0	25.5	24.3	30.0	26.8	26.5	0.44	23.0	0.83
Kellogg	0.55	0.31	3.6306	0.0940	74.6	72.6	61.1	70.4	54.5	66.4	3.21	28.5 (4)	1.74
Kirby Corp.	0.90	0.79	3.6446	0.0995	10.4	13.0	13.2	11.9	11.0	11.9	(0.53)	11.5	(0.78)
Lancaster Colony	0.75	0.59	3.7450	0.0969	22.9	24.6	19.6	18.6	18.1	20.0	0.01	16.5	(0.16)
Lance Inc.	0.65	0.46	3.9241	0.1016	13.7	12.6	13.4	11.0	13.1	12.8	(0.47)	16.5	(0.16)
Lawson Products	0.65	0.42	3.6513	0.0945	15.9	16.3	8.7	7.7	9.7	11.7	(0.54)	14.0	(0.40)
Lincoln Elec Hdgs.	0.60	0.66	4.0224	0.1041	20.7	19.3	16.8	17.2	11.7	17.1	(0.19)	20.0	0.49
Marathon Oil Corp.	0.65	0.78	3.5433	0.0917	8.0	27.0	26.7	11.1	16.7	18.1	(0.12)	14.0	(0.40)
Matthews Int'l	0.65	0.41	3.7450	0.0969	21.9	22.0	21.0	21.1	17.5	20.7	0.05	14.5	(0.32)
McGraw-Hill	0.60	0.65	3.1551	0.0817	23.7	26.2	25.9	26.6	24.6	25.4	0.36	25.0	1.22
Medtronic Inc.	0.90	0.76	3.8651	0.1026	24.7	23.4	23.0	21.8	22.0	23.0	0.21	20.5	0.56
Merck & Co.	0.65	0.77	3.7757	0.0977	44.5	48.0	45.4	39.3	42.3	43.5	1.56	29.5	1.88

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-11), Page 1 of 6

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-11), Page 2 of 6

United Water Idaho, Inc.
Comparable Earnings Analysis
for a Proxy Group of Ninety-Nine Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)

Proxy Group of Ninety-Nine Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
Mercury General	0.90	0.80	3.3098	0.0857	14.7	10.6	9.8	10.2	14.1	11.9	(0.53)	16.0	0.19
Minerals Techn.	0.90	0.78	3.6285	0.0939	12.8	12.6	10.2	9.1	7.3	10.4	(0.63)	10.5	(0.91)
Murphy Oil Corp.	0.95	0.74	3.9871	0.1032	9.4	24.3	17.6	9.4	13.1	14.2	(0.38)	9.5	(1.06)
National Commerce Fin'l	0.90	0.82	3.6614	0.0948	19.2	15.4	8.5	12.1	10.3	13.3	(0.44)	13.5	(0.47)
New Plan Excel Rlty	0.65	0.48	3.3150	0.0858	9.2	7.9	7.0	7.6	6.1	8.0	(0.78)	12.5	(0.62)
Northrop Grumman	0.60	0.38	3.8461	0.0996	14.6	15.9	5.5	4.8	4.8	9.2	(0.71)	10.5	(0.91)
Occidental Petroleum	0.85	0.73	3.4225	0.0886	7.3	27.9	23.6	16.2	20.3	19.0	(0.08)	11.5	(0.76)
Pactiv Corp.	0.85	0.77	4.0803	0.1061	7.1	9.3	9.8	24.5	21.7	14.5	(0.36)	16.0	(0.10)
People's Bank	0.85	0.72	3.2209	0.0834	14.3	12.3	2.6	5.8	6.4	8.3	(0.77)	10.5	(0.91)
PepsiAmericas Inc.	0.75	0.58	3.7762	0.0978	8.2	5.8	8.3	9.4	9.8	7.5	(0.82)	9.5	(1.06)
PepsiCo Inc.	0.65	0.44	3.1931	0.0827	26.8	30.1	34.8	37.7	30.0	31.8	0.79	33.0 (4)	2.40
Pfizer Inc.	0.85	0.71	3.3984	0.0880	30.2	40.4	45.6	47.9	19.5	36.3	1.22	26.0	1.37
Protective Life	0.90	0.79	3.7503	0.0971	17.7	12.3	10.1	10.0	9.8	12.0	(0.52)	10.0	(0.99)
Quaker Chemical	0.80	0.63	3.8901	0.1007	19.0	20.2	16.8	16.2	13.2	17.1	(0.18)	12.5	(0.62)
Ralcorp Holdings	0.55	0.29	3.4046	0.0881	11.2	10.8	9.8	12.3	13.0	11.4	(0.56)	11.5	(0.76)
Ruddick Corp.	0.85	0.70	3.7643	0.0980	11.4	10.9	10.9	12.3	12.1	11.5	(0.56)	12.5	(0.62)
SLM Corporation	0.80	0.68	3.5721	0.0925	47.9	34.8	37.3	31.9	33.3	37.0	1.13	25.5	1.29
Sara Lee Corp.	0.60	0.36	3.4174	0.0885	66.3	92.0	89.9	63.8	59.1	80.8 (4)	4.02	35.0 (4)	2.69
Selective Ins. Group	0.80	0.64	3.6719	0.0951	9.4	4.8	4.5	8.1	7.7	6.5	(0.89)	13.0	(0.54)
Sensient Techn.	0.70	0.54	3.6751	0.0951	18.6	18.7	15.1	16.2	13.4	16.0	(0.26)	13.5	(0.47)
ServiceMaster Co.	0.75	0.55	4.0512	0.1049	18.8	15.9	9.4	14.0	19.4	15.5	(0.29)	22.5	0.85
Sigma-Aldrich	0.80	0.69	4.0344	0.1044	11.8	16.2	17.4	14.8	18.3	15.9	(0.26)	17.5	0.12
Smucker (J.M.)	0.65	0.41	3.7441	0.0969	11.4	13.4	12.2	9.3	10.0	11.3	(0.57)	11.5	(0.76)
Standex Int'l	0.60	0.63	3.8767	0.1004	18.9	16.5	14.5	11.4	11.1	14.9	(0.33)	19.0	0.34
Stryker Corp.	0.75	0.58	4.0975	0.1061	23.8	25.9	25.7	23.8	21.0	24.1	0.28	31.0 (4)	2.10
Sysco Corp.	0.80	0.65	3.8151	0.0910	25.4	25.8	27.8	31.8	35.4	29.3	0.62	28.0	1.66
Tecumseh Products 'A'	0.80	0.62	3.9302	0.1017	13.1	6.6	4.4	5.5	3.8	6.7	(0.87)	9.5	(1.06)
Tennant Co.	0.75	0.60	3.6385	0.0942	17.7	18.2	3.1	8.0	8.9	11.1	(0.58)	12.0	(0.69)
Thomas Inds.	0.75	0.58	3.8254	0.0990	12.5	13.5	11.9	10.4	9.7	11.8	(0.55)	8.0	(1.26)
Thomburg Mtg.	0.70	0.54	3.5956	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.58)	14.5	(0.32)
Toro Co.	0.60	0.69	3.2788	0.0849	12.8	14.3	14.8	17.4	18.5	15.5	(0.29)	27.0	1.51
Union Pacific	0.00	0.78	3.2485	0.0841	8.2	9.0	6.7	9.3	9.5	8.7	(0.74)	9.0	(1.13)
Universal Corp.	0.70	0.48	3.7026	0.0960	23.6	23.7	21.4	18.1	18.3	21.0	0.07	17.0	0.04
Unocal Corp.	0.90	0.78	3.4344	0.0889	5.2	26.6	19.2	10.0	16.0	15.4	(0.30)	14.5	(0.32)
Valspar Corp.	0.80	0.81	3.6816	0.0948	20.9	19.8	7.9	16.3	12.9	15.6	(0.28)	13.0	(0.54)
Walgreen Co.	0.85	0.72	3.7290	0.0965	17.9	17.9	16.7	16.3	16.1	17.0	(0.18)	17.0	0.04
Weis Markets	0.70	0.52	3.2491	0.0841	8.5	7.9	10.1	10.4	9.5	9.3	(0.70)	10.0	(0.99)
Wendy's Int'l	0.75	0.54	3.8883	0.1032	15.6	16.1	16.8	15.1	13.4	15.8	(0.27)	14.0	(0.40)
West Pharmac. Svcs.	0.70	0.49	3.6054	0.0933	15.7	6.3	11.8	8.4	10.8	10.8	(0.62)	14.5	(0.32)
Zimmer Holdings	0.75	0.59	3.8939	0.1266	42.7	73.8	242.4	70.4	9.3	87.7 (4)	4.49	13.5	(0.47)
Average for the Non-Utility Group	0.77	0.62	3.7011	0.0981									
Average for the Proxy Group of Three Value Line (Standard Edition) Water Companies	0.72	0.54	3.6320	(10 0.0940									
Mean										16.7%		15.5%	
Conclusion (6)											16.1% (6)		
Conservative Mean (7)										14.5%		13.6%	
Conservative Conclusion (8)											14.1% (6)		

See pages 5 and 6 for notes.

United Water Idaho, Inc.
Comparable Earnings Analysis
for a Proxy Group of Ninety-Nine Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)

Proxy Group of Ninety-Nine Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
21st Century Ins. Group	0.65	0.73	4.1045	0.1063	12.1 %	1.8 %	3.7 %	7.4 %	8.5 %	6.7 %	(0.87)	13.0 %	(0.54)
ABM Industries Inc.	0.70	0.51	3.8382	0.0994	14.0	13.7	12.5	12.1	8.2	12.1	(0.52)	13.5	(0.47)
Abbott Labs.	0.80	0.64	4.0020	0.1036	34.7	32.5	32.5	30.4	26.6	31.3	0.75	20.5	0.56
Albemarle Corp.	0.85	0.77	3.1649	0.0819	16.8	17.2	11.7	11.7	12.6	14.0	(0.39)	13.0	(0.54)
Allied Capital Corp.	0.95	0.76	3.6577	0.0947	14.8	13.8	14.8	14.7	10.0	13.8	(0.42)	19.0	0.34
Amerada Hess	0.80	0.79	4.0009	0.1036	10.1	25.4	19.3	12.8	9.5	15.4	(0.30)	8.5	(1.21)
Anheuser-Busch	0.60	0.38	3.2183	0.0833	35.8	37.6	42.0	53.4	76.6	51.1 (4)	2.07	35.0 (4)	2.99
Annaly Mortgage Mgmt.	0.65	0.48	3.5641	0.0923	17.6	12.2	13.8	20.3	15.7	15.9	(0.26)	15.5	(0.18)
Applied Indl Techn.	0.75	0.58	3.8803	0.1025	6.8	10.4	9.0	4.8	5.9	7.4	(0.83)	10.5	(0.91)
Archer Daniels Midl'd	0.70	0.54	3.7598	0.0973	4.5	4.9	6.1	6.8	6.2	5.7	(0.84)	9.0	(1.13)
Arrow Int'l	0.60	0.33	3.9025	0.1010	15.8	17.0	14.3	13.1	13.3	14.7	(0.34)	13.0	(0.54)
Ball Corp.	0.85	0.73	3.9152	0.1014	15.1	16.6	21.0	32.3	29.4	22.9	0.20	28.0	1.37
Bandag Inc.	0.90	0.82	4.0361	0.1045	13.2	12.7	8.5	11.1	12.6	11.6	(0.55)	13.0	(0.54)
Bard (C.R.)	0.75	0.50	3.7710	0.0976	20.5	20.4	18.2	20.1	18.5	19.7	(0.01)	22.0	0.78
Barnes Group	0.75	0.60	3.9747	0.1003	15.8	17.7	9.8	13.0	10.3	13.3	(0.44)	14.0	(0.40)
Beckman Coulter	0.60	0.38	4.0464	0.1047	48.5	38.5	27.3	26.9	20.3	31.5	0.77	14.0	(0.40)
Becton Dickinson	0.75	0.61	3.9551	0.1024	21.8	20.1	18.8	19.3	19.6	19.9	0.00	17.0	0.04
Berry Petroleum 'A'	0.70	0.48	3.9777	0.1030	15.5	25.8	14.3	17.5	17.5	18.1	(0.12)	12.0	(0.69)
Blyth Inc.	0.75	0.59	4.0458	0.1047	24.3	23.0	18.9	18.9	17.0	19.5	(0.03)	14.5	(0.32)
Bob Evans Farms	0.85	0.72	3.9148	0.1013	12.3	11.1	12.5	13.4	11.4	12.1	(0.52)	12.0	(0.69)
CLARCOR Inc.	0.85	0.71	3.7284	0.0965	16.8	18.8	15.3	14.8	14.7	15.8	(0.28)	13.5	(0.47)
ChoicePoint Inc.	0.85	0.75	4.0305	0.1043	18.1	18.1	18.3	18.1	18.1	17.3	(0.17)	18.0	(0.10)
City National Corp.	0.80	0.79	3.3312	0.0862	18.9	17.7	16.4	16.3	15.3	16.9	(0.20)	14.0	(0.40)
Coca-Cola	0.85	0.41	3.6732	0.1003	34.0	39.4	35.0	34.7	34.0	35.4	1.03	33.5 (4)	2.47
Commercial Metals	0.90	0.81	4.0341	0.1044	11.3	11.0	5.8	6.1	3.7	7.8	(0.79)	14.5	(0.32)
ConAgra Foods	0.70	0.52	3.5237	0.0912	23.8	27.0	17.1	18.2	18.2	20.8	0.07	18.0	0.19
ConocoPhillips	0.85	0.75	3.1745	0.0822	10.5	29.4	11.4	5.1	13.4	13.8	(0.40)	8.0	(1.28)
Corn Products Int'l	0.75	0.62	3.7803	0.0981	7.5	8.4	6.7	7.6	8.3	7.3	(0.83)	10.0	(0.69)
Curtiss-Wright	0.70	0.48	3.5467	0.0918	12.3	13.1	11.0	10.1	10.9	11.6	(0.55)	12.5	(0.62)
Dean Foods	0.65	0.40	3.4591	0.0895	20.5	20.1	8.5	17.0	12.8	15.7	(0.26)	11.0	(0.84)
Dentsply Int'l	0.70	0.54	3.3077	0.0856	19.2	19.4	18.0	17.5	15.4	17.9	(0.13)	13.5	(0.47)
Donaldson Co.	0.90	0.81	3.8120	0.0935	23.8	25.1	23.7	22.7	21.3	23.3	0.23	20.0	0.46
Federated Investors	0.90	0.82	3.8584	0.0999	104.4	105.1	72.8	59.8	51.7	78.8 (4)	3.90	29.5	1.88
Ferro Corp.	0.90	0.80	3.5598	0.0921	24.8	23.7	13.0	8.5	5.4	15.0	(0.32)	10.5	(0.91)
Fortune Brands	0.85	0.72	3.6381	0.0942	12.4	17.1	17.8	21.2	20.9	17.8	(0.13)	18.0	0.19
Franklin Electric	0.65	0.41	3.8328	0.0992	27.8	20.9	22.0	21.0	17.9	21.9	0.13	17.5	0.12
Gen'l Dynamics	0.75	0.62	3.9923	0.1033	22.5	23.8	20.8	20.2	16.7	20.8	0.06	15.0	(0.25)
Gillette	0.65	0.47	3.9084	0.1035	41.2	65.0	48.8	53.5	61.8	54.1 (4)	2.26	39.5 (4)	3.35
Golden West Fin'l	0.85	0.75	3.5952	0.0931	13.0	10.7	11.8	18.1	18.8	14.0	(0.39)	18.0	0.19
HON Industries Inc.	0.85	0.74	3.8729	0.0951	19.8	18.5	15.2	14.1	13.8	16.3	(0.24)	18.0	0.34
Harland (John H.)	0.70	0.50	4.0867	0.1053	25.3	18.7	19.3	22.4	22.0	21.1	0.09	15.5	(0.18)
Harte-Hanks	0.80	0.68	3.2423	0.0939	12.8	14.9	14.4	17.0	15.7	14.9	(0.33)	18.0	0.19
Hillenbrand Inds.	0.80	0.67	3.4433	0.0891	17.7	18.7	17.7	19.8	21.1	19.0	(0.06)	21.0	0.63
IHOP Corp.	0.69	0.76	3.6811	0.0953	14.2	13.8	12.9	11.2	11.1	12.6	(0.48)	12.0	(0.88)
Int'l Flavors & Frag.	0.75	0.59	3.7525	0.0971	22.0	23.7	25.8	32.0	26.9	26.1	0.41	20.5	0.56
Invacare Corp.	0.60	0.67	3.8611	0.1000	15.8	15.1	15.8	13.5	11.6	14.4	(0.35)	12.5	(0.62)
Johnson & Johnson	0.65	0.46	3.2778	0.0849	26.0	25.5	24.3	30.0	26.8	26.5	0.44	23.0	0.93
Kellogg	0.55	0.31	3.6308	0.0940	74.5	72.6	61.1	79.4	54.5	68.4	3.21	28.5 (4)	1.74
Kirby Corp.	0.90	0.79	3.8448	0.0995	10.4	13.0	13.2	11.9	11.0	11.9	(0.53)	11.5	(0.76)
Lancaster Colony	0.75	0.59	3.7450	0.0969	22.9	24.8	19.8	16.6	16.1	20.0	0.01	15.5	(0.18)
Lance Inc.	0.65	0.46	3.8241	0.1018	13.7	12.6	13.4	11.0	13.1	12.8	(0.47)	15.5	(0.18)
Lawson Products	0.65	0.42	3.6513	0.0945	15.9	18.3	8.7	7.7	9.7	11.7	(0.54)	14.0	(0.40)
Lincoln Elec Hldgs.	0.80	0.68	4.0224	0.1041	20.7	19.3	16.8	17.2	11.7	17.1	(0.19)	20.0	0.49
Marathon Oil Corp.	0.65	0.76	3.5433	0.0917	9.0	27.0	26.7	11.1	16.7	18.1	(0.12)	14.0	(0.40)
Matthews Int'l	0.65	0.41	3.7430	0.0969	21.8	22.0	21.0	21.1	17.5	20.7	0.05	14.5	(0.32)
McGraw-Hill	0.80	0.65	3.1551	0.0817	23.7	26.2	25.8	26.6	24.6	25.4	0.39	25.0	1.22
Medtronic Inc.	0.90	0.78	3.8651	0.1026	24.7	23.4	23.0	21.8	22.0	23.0	0.21	20.5	0.56
Merck & Co.	0.85	0.77	3.7757	0.0977	44.6	46.0	45.4	39.3	42.3	43.5	1.58	29.5	1.88

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-11), Page 3 of 6

United Water Idaho, Inc.
Comparable Earnings Analysis
for a Proxy Group of Ninety-Nine Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (8)

Proxy Group of Ninety-Nine Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (8)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
Mercury General	0.80	0.80	3.2096	0.0857	14.7	10.6	9.8	10.2	14.1	11.9	(0.53)	18.0	0.19
Minerals Techn.	0.90	0.79	3.6265	0.0839	12.8	12.6	10.2	9.1	7.3	10.4	(0.83)	10.5	(0.91)
Murphy Oil Corp.	0.85	0.74	3.9871	0.1032	9.4	24.3	17.8	6.4	13.1	14.2	(0.38)	8.5	(1.05)
National Commerce Fin'l	0.90	0.82	3.6814	0.0948	19.2	15.4	9.5	12.1	10.3	13.3	(0.44)	13.5	(0.47)
New Plan Excel R'lty	0.65	0.46	3.3158	0.0850	9.2	7.9	7.0	7.8	8.1	8.0	(0.70)	12.5	(0.62)
Northrop Grumman	0.60	0.38	3.8481	0.0998	14.8	16.8	5.5	4.8	4.8	9.2	(0.71)	10.5	(0.91)
Occidental Petroleum	0.85	0.73	3.4225	0.0888	7.3	27.8	23.6	16.2	20.3	19.0	(0.06)	11.5	(0.76)
Pacific Corp.	0.85	0.77	4.0803	0.1081	7.1	9.3	9.8	24.5	21.7	14.5	(0.36)	16.0	(0.10)
People's Bank	0.65	0.72	3.2209	0.0834	14.3	12.3	2.6	5.9	6.4	8.3	(0.77)	10.5	(0.91)
PepsiAmericas Inc.	0.75	0.56	3.7762	0.0978	6.2	5.8	6.3	9.4	9.8	7.5	(0.82)	9.5	(1.05)
PepsiCo Inc.	0.65	0.44	3.1831	0.0827	26.8	30.1	34.6	37.7	30.0	31.8	0.79	33.0 (4)	2.40
Pfizer Inc.	0.65	0.71	3.3984	0.0880	36.2	40.4	45.6	47.8	19.5	38.3	1.22	28.0	1.37
Protective Life	0.80	0.78	3.7503	0.0971	17.7	12.3	10.1	10.0	9.8	12.0	(0.52)	10.0	(0.99)
Quaker Chemical	0.80	0.83	3.6901	0.1007	19.0	20.2	16.8	16.2	13.2	17.1	(0.19)	12.5	(0.62)
Ralcorp Holdings	0.55	0.20	3.4048	0.0881	11.2	10.8	9.8	12.3	13.0	11.4	(0.56)	11.5	(0.76)
Ruddick Corp.	0.65	0.70	3.7843	0.0980	11.4	10.8	10.8	12.3	12.1	11.5	(0.56)	12.5	(0.62)
SLM Corporation	0.80	0.68	3.5721	0.0925	47.8	34.8	37.3	31.9	33.3	37.0	1.13	25.5	1.29
Sara Lee Corp.	0.60	0.36	3.4174	0.0885	88.3	92.0	89.9	83.8	59.1	80.6 (4)	4.02	35.0 (4)	2.69
Selective Ins. Group	0.60	0.64	3.6718	0.0951	9.4	4.6	4.5	8.1	7.7	6.5	(0.89)	13.0	(0.54)
Sensient Techn.	0.70	0.54	3.6751	0.0951	18.8	18.7	15.1	16.2	13.4	16.0	(0.26)	13.5	(0.47)
ServiceMaster Co.	0.75	0.55	4.0512	0.1049	18.8	15.8	9.4	14.0	18.4	15.5	(0.29)	22.5	0.85
Sigma-Aldrich	0.80	0.69	4.0344	0.1044	11.8	16.2	17.4	14.8	19.3	15.9	(0.26)	17.5	0.12
Smucker (J.M.)	0.65	0.41	3.7441	0.0969	11.4	13.4	12.2	9.3	10.0	11.3	(0.57)	11.5	(0.76)
Standex Int'l	0.80	0.63	3.8707	0.1004	18.8	18.8	14.5	11.4	11.1	14.9	(0.33)	19.0	0.34
Stryker Corp.	0.75	0.58	4.0975	0.1061	23.8	25.8	25.7	23.8	21.0	24.1	0.28	31.0 (4)	2.10
Sysco Corp.	0.80	0.65	3.5151	0.0910	25.4	25.8	27.8	31.9	35.4	29.3	0.62	28.0	1.66
Tecumseh Products 'A'	0.80	0.62	3.9302	0.1017	13.1	8.6	4.4	5.5	3.8	6.7	(0.87)	9.5	(1.06)
Tennant Co.	0.75	0.60	3.6385	0.0942	17.7	16.2	3.1	8.0	8.5	11.1	(0.58)	12.0	(0.69)
Thomas Inds.	0.75	0.56	3.8254	0.0990	12.5	13.5	11.9	10.4	8.7	11.6	(0.55)	8.0	(1.28)
Thomburg Mtg.	0.70	0.54	3.5856	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.56)	14.5	(0.32)
Toro Co.	0.80	0.69	3.2766	0.0849	12.5	14.3	14.8	17.4	18.5	15.5	(0.29)	27.0	1.51
Union Pacific	0.90	0.78	3.2485	0.0841	8.2	9.0	8.7	9.3	8.5	8.7	(0.74)	9.0	(1.13)
Universal Corp.	0.70	0.49	3.7086	0.0960	23.8	23.7	21.4	19.1	18.3	21.0	0.07	17.0	0.04
Unocal Corp.	0.90	0.78	3.4344	0.0889	5.2	26.8	19.2	10.0	18.0	15.4	(0.30)	14.5	(0.32)
Valspar Corp.	0.90	0.81	3.6818	0.0948	20.9	19.8	7.9	16.3	12.9	15.6	(0.29)	13.0	(0.54)
Walgreen Co.	0.85	0.72	3.7290	0.0965	17.9	17.9	16.7	15.3	16.1	17.0	(0.19)	17.0	0.04
Weis Markets	0.70	0.52	3.2481	0.0841	8.5	7.9	10.1	10.4	9.5	9.3	(0.70)	10.0	(0.99)
Wendy's Int'l	0.75	0.54	3.9883	0.1032	16.8	16.1	16.8	15.1	13.4	15.8	(0.27)	14.0	(0.40)
West Pharmac. Svcs.	0.70	0.49	3.6054	0.0933	15.7	9.3	11.8	6.4	10.8	10.6	(0.62)	14.5	(0.32)
Zimmer Holdings	0.75	0.59	3.8939	0.1288	42.7	73.6	242.4	70.4	9.3	87.7 (4)	4.49	13.5	(0.47)
Average for the Non-Utility Group	0.77	0.62	3.7011	0.0961									
Average for the Proxy Group of Three Value Line (Standard Edition) Water Companies	0.72	0.54	3.6320	(10 0.0940									
Mean										16.7%		15.5%	
Conclusion (5)											16.1% (6)		
Conservative Mean (7)										14.5%		13.6%	
Conservative Conclusion (8)											14.1% (6)		

See pages 5 and 6 for notes.

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-11), Page 4 of 6

United Water Idaho, Inc.
Comparable Earnings Analysis

Notes: (1) The criteria for selection of the proxy group of eighty-one non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of eighty-one non-utility companies was selected based upon the proxy group of six C. A. Turner water companies' unadjusted beta range of 0.15 - 0.75 and standard error of the regression range of 3.2822 – 4.2788. These ranges are based upon plus or minus three standard deviations of the unadjusted beta and standard error of the regression as detailed in Ms. Ahern's accompanying direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(2) Ending 2003.

(3) 2007-2009.

(4) The Student's T-statistic associated with these returns exceeds 1.96 at the 95% level of confidence. Therefore, they have been excluded, as outliers, to arrive at proper mean historical and projected returns as fully explained in Ms. Ahern's accompanying testimony.

(5) The standard deviation of the proxy group of six C. A. Turner water companies' standard error of the regression is 0.1661. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{/2N}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1661 = \frac{3.7805}{/518} = \frac{3.7805}{22.7596}$$

(6) Mid-point of the arithmetic mean of the historical five year average and five year projected rate of return on net worth.

(7) Arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those below 8.8%, i.e., 200 basis points above the prospective yield of 6.8% on A rated Moody's public utility bonds (from page 1 of Schedule (PMA-9).)

(8) Mid-point of the arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those below 8.8%, i.e., 200 basis points above the prospective yield of 6.8% on A rated Moody's public utility bonds (from page 1 of Schedule (PMA-9).)

(9) The criteria for selection of the proxy group of ninety-nine non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or

projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of ninety-nine non-utility companies was selected based upon the proxy group of three Value Line (Standard Edition) water companies' unadjusted beta range of 0.26 - 0.82 and standard error of the regression range of 3.1532– 4.1108. These ranges are based upon plus or minus three standard deviations of the unadjusted beta and standard error of the regression as detailed in Ms. Ahern's accompanying direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(10) The standard deviation of the proxy group of three Value Line (Standard Edition) water companies' standard error of the regression is 0.1596 (3.6320 / 22.7596).

Source of Information: Value Line, Inc., September 16, 2004
Value Line Investment Survey (Standard Edition)

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF UNITED WATER IDAHO INC. FOR AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WATER SERVICE IN THE STATE OF IDAHO	Case No. UWI-W-04-04

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

REBUTTAL TESTIMONY OF PAULINE M. AHERN, CRRA, VICE PRESIDENT

AUS CONSULTANTS—UTILITY SERVICES

ON BEHALF OF UNITED WATER IDAHO INC.

TABLE OF CONTENTS

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 testimony in this proceeding?

A. Yes, I am.

Q. Have you prepared an exhibit which supports your rebuttal testimony?

A. Yes, I have. It has been marked for identification as Exhibit No. 18 and consists of Schedules (PMA-12) through (PMA-17).

II. PURPOSE

Q. What is the purpose of this testimony?

A. The purpose of this testimony is to rebut certain aspects of the prepared testimonies of Idaho Public Utilities Commission (IPUC) Staff Witnesses Carolee Hall and Terri Carlock concerning common equity cost rate and overall rate of return. Specifically, I will address: Ms. Hall's recommended debt cost rate; the inadequacy of her recommended common equity cost rate; and her assessment of the relative risk of United Water Idaho Inc. (United). I will also address Ms. Carlock's misuse of the data contained in Exhibit No. 12 accompanying my direct testimony; her applications of both the Comparable Earnings and Discounted Cash Flow models; and the inadequacy of her

recommended common equity cost rate of 10.00%. Finally, I will provide an update of my recommended common equity cost rate.

III. IPUC STAFF WITNESS HALL

A. Debt Cost Rate

Q. Do you agree with Staff's adjustment to the Company's cost of debt?

A. No. The Company has calculated its proposed debt cost rate of 6.90% by dividing the annual cost of debt, comprised of the aggregate annual interest expense plus the aggregate annual amortization of the net discount, premium and expenses, by the aggregate bond issuances minus the aggregate unamortized balances of net discount, premium and expense at December 31, 2004. Ms. Hall states on page 6, line 24 through page 7, line 1 of her direct testimony that "Staff believes that the Company has not reflected the discounting properly, thereby inflating the embedded cost rate and the overall long-term debt cost." In contrast, Staff has used the aggregate face value of the bonds in the denominator of the calculation. In Ms. Hall's opinion, doing so "accurately reflects the discounting of issuance costs to properly allow the Company to recover in rates the annual interest cost and the annual amortization of issuance costs." (see page 7, at lines 13 - 16). However, Ms. Hall did not provide any empirical evidence in support of her assertion.

Q. Can you provide empirical evidence that shows that the methodology the Company used to calculate its proposed debt cost rate does not inflate the embedded long-term debt cost rate?

A. Yes. That evidence is shown on pages 1 and 2 of Schedule (PMA-12). Schedule (PMA-12) shows that the Company's recovers its full net discount, premium and expenses through its debt cost rate calculation methodology in contrast to an inability to fully recover these costs using the Staff's methodology. Page 1 provides an example using a bond sold at discount, while page 2 provides an example using a bond sold at premium. In both cases, the Company fully recovers its costs using its debt cost rate methodology. In the first instance, with a bond sold at discount, the Company does not fully recover its costs using Staff's methodology. In the second, with a bond sold at premium, the Company would recover more than its costs using Staff's methodology.

Q. Please explain.

A. In the case of a 2-year, $100 par bond with an 8.00% coupon rate, sold at a 10% discount, or $90, the annual interest expense is $8.00 ($8.00 = $100 * 8.00%). The amortization of the discount would be $5.00 / year ($5.00 = $10.00 / 2 years). Using the Company's debt cost rate methodology, the total annual revenue requirement, i.e., interest and amortization expense, is $13.00 ($13.00 = $8.00 interest + $5.00 amortization of discount). In Year 1, the Company receives net proceeds of $90, the $100 face value of the bond less the $10 discount, and invests it in rate base. Since the Company needs to recover $13 per year, the debt cost rate in Year 1 is 14.44% ($13.00 / $90.00). Applying this 14.44% debt cost rate to the $90 debt portion of rate base

provides the Company with the proper revenue requirement of $13.00. Debt holders receive $8.00 in interest and the unamortized balance of net discount is reduced by $5.00. In Year 2, then, the unamortized balance of net discount is $5.00 ($5.00 = $10.00 - $5.00) and the denominator of the Company's debt cost rate calculation is $95 ($95 = $100 face value - $5.00 unamortized balance of net discount at the beginning of Year 2). The debt cost rate in Year 2 is thus 13.68% (13.68% = $13.00 / $95.00). The $5.00 annual amortization expense is invested in rate base, raising the rate base debt investment to $95. Applying this 13.68% debt cost rate to the $95 debt portion of rate base again provides the Company with the proper revenue requirement of $13.00. Debt holders receive $8.00 in interest and the unamortized balance of net discount is reduced by $5.00. Once again, the $5.00 annual amortization expense is invested in rate base, raising the rate base debt investment to $100, the original face value of the debt. Thus, the Company is made whole, having recovered its full $10 discount on the debt.

In contrast, using Staff's methodology, the bottom half of page 1 of Schedule (PMA-12) demonstrates how applying a constant 13% debt cost rate, i.e., $8.00 annual interest expense plus $5.00 annual amortization / $100 face value of the bond, does not provide the Company with the opportunity to fully recover the $10 discount on the debt. During Year 1, the Company will have received only $11.70, i.e., 13.00% * $90 (the portion of the debt in rate base in Year 1). With $8.00 interest paid to debt holders, only $3.70 remains to offset

the unamortized balance of the discount. Thus, during Year 2, the amount of debt in the rate base is $93.70 ($93.70 = $90.00 + $3.70) and only $12.18 is received by the Company ($12.18 = 13.00% * $95.00). After paying $8.00 of interest to debt holders, the Company will have $4.18 to offset the unamortized balance of the discount. At the end of two years, the Company, using Staff's methodology, will have recovered only $7.88 in aggregate amortization expenses. This leaves $2.12 not yet recovered ($2.12 = $10.00 - $7.88). Since the debt will no long be outstanding, there will be no opportunity for further recovery of this $2.12 and the Company does not fully recover the costs associated with the debt.

Likewise, in a similar manner, page 2 demonstrates that using the Company's debt cost rate methodology, the Company accurately recovers its costs for a bond sold at premium, but recovers more than its costs for the same bond using Staff's methodology.

B. Common Equity Cost Rate

Q. On page 12, lines 19 - 22 of her direct testimony, Ms. Hall states that she "calculated a water utilities industry cost of equity of 10% and recommend[s] that this rate be authorized for United Water Idaho", and on page 13, lines 3 - 7, Ms. Hall asserts that a common equity cost rate of 10% is "in line with the composite Value Line returns for the industry." Please comment.

A. Ms. Hall supports her recommended common equity cost rate of 10% with Value Line Investment Survey's (Value Line) composite statistics for the water

utilities industry as published on October 29, 2004 and January 28, 2005. She states at page 13, lines 5-7 that the "return on shareholder's equity and common equity for 2004 and 2005 was 9.5%" and "[f]or the years of 2007-2009 it is projected to be at 10%." Although those are Value Line's composite estimates for the water utility industry, the average expected returns on common equity (ROEs) for the three individual water companies which comprise the Value Line water industry contained in Value Line Investment Survey's Standard Edition and Ms. Hall's DCF sample group (American States Water Company, Aqua America, Inc. and California Water Service Group) average 10.4% for 2004 and 2005 and 11.5% for 2007-2009 from both the October 29, 2004 Value Line and January 28, 2005 as shown on Schedule (PMA-13). Clearly Value Line is expecting the average proxy water company to earn a prospective ROE of 11.5% which is significantly greater than Ms. Hall's recommended common equity cost rate of 10.00%.

Moreover, the most currently available Value Line Investment Survey (April 29, 2005) is projecting these same three water companies to earn an average projected 5-year ROE of 12.0%. In addition, the expected ROEs for the Value Line composite water industry are 11.3% for 2005 and 2006 and 12.0% for 2008-2010. It is clear, then, that Ms. Hall's recommended common equity cost rate of 10% is also not in line with the most current Value Line ROE expectations for water companies, either on an average or composite basis. In fact, the most recent (April 29, 2005) Value Line expected ROEs for

Value Line's composite water industry, 11.3% for 2005 and 2006 and 12.0% for the 2008-2010 clearly demonstrate that both my originally recommended common equity cost rate of 11.20%, as well as my updated recommended common equity cost rate of 11.10% (which will be discussed subsequently) are conservatively reasonable.

C. Relative Risk of United Water Idaho Inc.

Q. Ms. Hall disagrees with the Company's position regarding the risks of United Water Idaho Inc. Please comment.

A. Ms. Hall's disagreement with the Company's risk analysis centers on the betas of the three Value Line water companies. Ms. Hall correctly states that two of the companies ((American States Water Company and Aqua America, Inc.) have Value Line adjusted betas of 0.70, while one company (California Water Service Group) has an adjusted beta of 0.75.[1] Ms. Hall is also correct that these betas "reflect[s] a lower than market risk for these water utilities." (see page 15, lines 3 and 4 of Ms. Hall's direct testimony) However, market risk is but a very small portion of the total investment risk faced by any given company. Total risk is the sum of market, i.e., diversifiable, risk and non-market, i.e., non-diversifiable or company specific risk. Hence, Ms. Hall's comparison of the betas of the three Value Line water companies with the market is an incomplete comparison. In addition, the R-squared of the

[1] Presumably from the January 28, 2005 Value Line Investment Survey. Note that these betas are identical to those published by Value Line for these three water companies on April 29, 2005.

regression which gives rise to betas describes the percentage of variation in the dependent variable, i.e., a company's market price, which is explained by the independent variable, i.e., the market price of the market as a whole. As Ibbotson Associates state on page 103 of Stocks, Bonds, Bills and Inflation – Valuation Edition 2005 Yearbook, which is provided in Schedule (PMA-14) "[a]n R-squared of 0 indicates that the independent variable does not explain any of the variation of the dependent variable." It is also stated on page 110 (page 3 of Schedule (PMA-14)) that "a high R-squared means that the movements of the returns of the security are explained largely by the movements of the returns of the market. The R-squared for security betas are usually quite low." Graph 6.4 on page 110, shows the distribution of the R-squareds for 5000 companies for whom Ibbotson Associates calculates betas. It is clear that the majority of these R-squareds are less than 0.10, indicated that less than 10% of the variation in the returns of individual securities are explained by the movements of the returns of the market. As Ibbotson Associates state on page 100: "What can we infer from this data? There may be other company- or industry-specific factors that drive security prices." It is clear then that a comparison of betas does not provide a comprehensive comparison of all the factors which drive security prices and hence the risk of a company.

In addition, Ms. Hall's comparison is limited to the three Value Line water companies and the market as a whole. She has not conducted any

relative risk comparison between United itself and the three Value Line water companies. Since United faces many extraordinary risk factors and is significantly smaller than the three Value Line water companies as measured by either total capitalization or estimated market capitalization of equity as discussed in my direct testimony on page 11, line 1 through page 16, line 17, United clearly is significantly more business risky than the three Value Line water companies. Consequently, no valid conclusion as to United's relative risk can be drawn from Ms. Hall's comparison of the relative market risk of the Value Line water companies. Therefore, Ms. Hall's recommended common equity cost rate of 10.0% is unsupported and grossly understated.

IV. IPUC STAFF WITNESS CARLOCK

A. Comparable Earnings Method

Q. Please comment upon Ms. Carlock's application of the Comparable Earnings Method (CEM).

A. Based upon a lengthy narrative, Ms. Carlock concludes that she "believe[s] a reasonable return on equity attributed to United Water Idaho is 9.5% - 10.0% under the Comparable Earnings method." Ms. Carlock provided no empirical data or analysis in support of this range of common equity cost rate. In responding to Company Data Request No. 20, a copy of which is attached as Schedule (PMA-15), which requested the identity of the companies used in her CEM as well as the source documents and calculations relied upon by Ms. Carlock, she replied that the water companies were those in my two proxy

groups and that she did a "risk-adjusted comparison with the Value Line electric utilities." Regarding the requested source documents and calculations, Ms. Carlock stated that the documents were available online and that Exhibit No. 12, my exhibit and workpapers were utilized. I would point out that I was never requested to, nor did I, provide any workpapers other than Exhibit No. 12. Hence, the precise source of and derivation of Ms. Carlock's range of CEM conclusion of 9.5% - 10.0% cannot be determined. However, given that it is identical to the Value Line composite water industry ROEs referenced by Ms. Hall as supporting her recommended common equity cost rate of 10.0%, one can only assume that Ms. Carlock relied upon the same Value Line expected ROEs for the three water companies in its Standard Edition as Ms. Hall. As previously discussed, relative to Schedule (PMA-13), the average expected ROEs for the three individual Value Line water companies for 2004 and 2005 which average 10.4%, as well as for the years 2007-2009, which average 11.5%[2] do not support a range of common equity cost rate of 9.5% - 10.0%. Furthermore, more current Value Line information, from April 29, 2005, indicates that the average expected ROEs for these three water companies for 2005 and 2006 and for the years 2008-2010 are 10.6% and 12.0%, respectively, which are also not supportive of a range of common equity cost rate of 9.5% - 10.0%.

In addition, in relying upon water companies in her CEM analysis,

[2] From both the October 29, 2004 and January 28, 2005 Value Line Investment Survey.

Ms. Carlock has introduced circularity into it as the ROEs of water companies are a direct result of the regulatory process, i.e., authorized ROEs. The circularity results because the earned returns, even on a projected basis, are not determined by competitive factors but rather by the regulatory process. As Roger A. Morin states[3]:

> It would be hopelessly circular to set a fair return based on the past actions of other regulators, much like observing a series of duplicate images in multiple mirrors.

In other words, Ms. Carlock is using data resulting from authorized ROES as the basis of recommending an authorized ROE.

As for Ms. Carlock's "risk-adjusted comparison with Value Line electric utilities", because I still do not know upon which specific electric utilities she relied or her risk-adjustment methodology, I can neither accept it nor comment upon it. And, neither should the IPUC.

In view of the foregoing, Ms. Carlock's range of CEM results of 9.5% - 10.0% is supported neither by the documentation she provided (or failed to provide) or by the average expected ROEs of the three Value Line (Standard Edition) water companies upon which the only DCF analysis documented by Staff in Ms. Hall's direct testimony is based.

B. Discounted Cash Flow Model (DCF)

Q. Please comment upon Ms. Carlock's DCF analysis.

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[3] Morin, Roger A., Regulatory Finance - Utilities' Cost of Capital. Public Utility Reports, Inc., Arlington, VA, 1994, p. 395.

A. Once again, in response to the Company's data requests, specifically Request Nos. 21 and 22 (provided as Schedule (PMA-16), rather than provide the requested source documents and calculations supporting her DCF analysis, Ms. Carlock responded that she relied upon Value Line, Exhibit No. 12 and my nonexistent workpapers. Therefore, it is not possible to know exactly how either her dividend yield range of 3.4% - 3.5% or her growth rate range of 5.0% - 6.0% were derived. Nor is it possible to figure out how a dividend yield range of 3.4% - 3.5% and a growth rate range of 5.0% - 6.0%, yields a range of DCF results of 8.0% - 10.5%.

In view of the foregoing, as with Ms. Carlock's "risk-adjusted comparison with the Value Line electric utilities" in her CEM, I can neither accept it nor comment upon it. And, neither should the IPUC.

Nevertheless, in her response to Part b. of Request No. 21, there is a hint that she has relied upon Value Line data for the years 2004, 2005 and 2007 – 2009, indicating that she relied upon forecasted growth in arriving at her growth rate range. Exactly how she utilized this information is unknown. However, there is ample empirical academic support for the use of analysts' forecasts of earnings growth in a DCF analysis. Over the long run, there can be no growth in DPS without growth in EPS. Earnings expectations have a more significant, but not exclusive, influence on market prices than dividend expectations. Thus, the use of earnings growth rates in a DCF analysis provides a better matching between investors' market appreciation

expectations and the growth rate component of a DCF. This is obvious, even to the laypersons who hear financial news reports on radio / TV and read them in newspapers / magazines.

In addition, Myron Gordon, the "father" of the standard regulatory version of the DCF model utilized by Ms. Carlock, Ms. Hall and myself in this proceeding, has recognized the significance of analysts' forecasts of growth in EPS in a speech given in March 1990 before the Institute for Quantitative Research and Finance. He said:

> We have seen that earnings and growth estimates by security analysts were found by Malkiel and Cragg to be superior to data obtained from financial statements for the explanation of variation in price among common stocks. . . estimates by security analysts available from sources such as IBES are far superior to the data available to Malkiel and Cragg. Eq (7) is not as elegant as Eq (4), but is has a good deal more intuitive appeal. It says that investors buy earnings, but what they will pay for a dollar of earnings increases with the extent to which the earnings are reflected in the dividend or in appreciation through growth.

Therefore, in view of the foregoing, since Ms. Carlock is apparently relying exclusively upon Value Line forecasted information in her DCF analysis, it would be appropriate for her to rely upon Value Line's projected growth in EPS, which averaged 9.5% (October 29, 2004), 9.5% (January 28, 2004) and 8.8% (April 29, 2005) for the three water companies as shown on Schedule (PMA-13). Using a projected EPS growth rate range of 8.8% - 9.5% and Ms. Carlock's range of 3.4% - 3.5% and conservatively not growing the dividend yield by the growth rate, results in a DCF common equity cost rate range of

12.2% - 13.0%, Thus, Ms. Carlock's DCF range of 8.0% - 10.5% is grossly understated.

If Ms. Carlock, who states that she has relied upon the data in Exhibit No. 12 accompanying my direct testimony, had utilized the growth rate range indicated by the average growth rates shown in Column 4 on page 1 of Schedule (PMA-5), 5.7% - 7.9%, a DCF cost rate range of 9.1% - 11.4%, with a midpoint of 10.25% results. However, because this 10.25% DCF cost rate is applicable to the three Value Line water companies which are significantly larger than United in terms of both total capitalization and estimated market capitalization (see page 3 of Schedule (PMA-17), i.e., page 3 of Schedule (PMA-1)(Updated)), this understates the common equity cost rate applicable to United. Adding a modest size adjustment of 30 basis points (0.30%) (see page 2 of Schedule (PMA-17), i.e., page 2 of Schedule (PMA-1)(Updated)), to this 10.25% DCF cost rate using Value Line projected growth in EPS, results in a DCF cost rate of 10.55% more applicable to United than Ms. Carlock's recommended range of DCF cost rate of 8.0% - 10.5%. Note, that a DCF cost rate of 10.55% more closely approximates the updated DCF cost rates for my two proxy groups of water companies, i.e., 10.4% and 10.6%, respectively as shown on page 2 of Schedule (PMA-17), i.e., page 2 of Schedule (PMA-1)(Updated). However, based upon the Efficient Market Hypothesis, (EMH) as discussed in my direct testimony at pages 23 – 25, the results of multiple cost of common equity models should be relied upon and not the results of a

single model, such as the DCF.

V. CONCLUSIONS

Q. What conclusions do you have after reviewing the direct testimonies of Ms. Hall and Ms. Carlock?

A. I conclude that the Company's debt cost rate should be accepted by the IPUC because it affords the Company's the opportunity to full recovery of all costs associated with the debt issues outstanding and that the Staff's debt cost rate should be rejected because it does not.

I also conclude that Staff's recommended return on common equity of 10.00% is unsupported by the analyses of Ms. Hall and Ms. Carlock and grossly understates the cost of common equity applicable to United, even if a size adjustment of 30 basis points (0.30%) on an updated basis (see page 2 of Schedule (PMA-17), i.e., page 2 of Schedule (PMA-1)(Updated)) is added.

IV. UPDATED COMMON EQUITY COST RATE

Q. Have you prepared an update of your common equity cost rate to reflect current capital market conditions?

A. Yes. The updated is shown on Schedule (PMA-17), which consists of forty-two (42) pages. Current capital market conditions indicate that an appropriate common equity cost rate applicable to United is 11.10% applicable to United's updated capital structure.

Q. Does that conclude your rebuttal testimony?

A. Yes.

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF UNITED WATER IDAHO, INC. FOR APPROVAL OF INCREASED RATES FOR WATER SERVICE	))))	CASE NO. UWI-W-04-04

EXHIBIT 18
TO ACCOMPANY THE
REBUTTAL TESTIMONY OF
PAULINE M. AHERN, CRRA, VICE PRESIDENT
AUS CONSULTANTS – UTILITY SERVICES

ON BEHALF OF UNITED WATER IDAHO, INC.

MAY 2005

United Water Idaho, Inc.
Demonstration of the Inadequacy of IPUC Staff Witness Hall's
Recommended Debt Cost Rate

Debt Cost Recovery to the Company of a Bond sold at Discount

Example 1: 2 year, $100 bond, 8.00% coupon rate, sold at $90 (Discount)

Method 1 (Used by Company): Varying cost rate; revenue requirements are constant

Year No.	Cash Flows From / To Investors	Debt in Rate Base at Beginning of Year	Total Revenue Requirements	Interest Payments	Amortization of Bond Discount
0	($90 00)	-			
1	$8 00	$90 00	$13 00	$8 00	$5 00
2	$108 00	$95 00	$13.00	$8.00	$5.00
3		$100 00			
	Totals		$26.00	$16.00	$10.00

Cost Rate Year 1 $13 / $90 = 14 44% (Revenue Requirement/Net Proceeds)
Year 2 $13 / $95 = 13 68% (Revenue Requirement/Net Proceeds)

Year 3 Rate Base =$100 00 (Face Value of Bond)
Bond Discount fully amortized in Year 2

Result: Company recovers its costs

Example 1: 2 year, $100 bond, 8.00% coupon rate, sold at $90 (Discount)

Method 2 (Used by Staff): Applying incorrect cost rate

Year No.	Cash Flows From / To Investors	Debt in Rate Base at Beginning of Year	Revenue Requirements Cost Rate of 13 0% Applied to Beg - Year Rate Base	Interest Payments	Amortization of Bond Discount
0	($90.00)	-			
1	$8 00	$90 00	$11 70	$8 00	$3 70
2	$108 00	$93 70	$12.18	$8.00	$4.18
3		$97 88			
	Totals		$23.88	$16.00	$7.88

Cost Rate Year 1 ($8+$5) or $13 / $100 = 13 00% (Revenue Requirement/Face Value of Bond)

Year 3 Rate Base =$97.88 (Does not Equal Face Value of Bond)
Bond Discount is not fully amortized in Year 2

Result: Company does not recover its costs

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-12), Page 1 of 2

United Water Idaho, Inc.
Demonstration of the Inadequacy of IPUC Staff Witness Hall's
Recommended Debt Cost Rate

Debt Cost Recovery to the Company of a Bond sold at Premium

Example 2: 2 year, $100 bond, 8.00% coupon rate, sold at $110 (Premium)

Method 1 (Used by Company): Varying cost rate; revenue requirements are constant

Year No.	Cash Flows From / To Investors	Debt in Rate Base at Beginning of Year	Total Revenue Requirements	Interest Payments	Amortization of Bond Premium
0	($110 00)	-			
1	$8.00	$110 00	$3 00	$8 00	($5 00)
2	$108 00	$105 00	$3.00	$8.00	($5.00)
3		$100 00			
	Totals		$6.00	$16.00	($10.00)

Cost Rate Year 1 $3 / $110 = 2 73% (Revenue Requirement/Net Proceeds)
Year 2 $3 / $105 = 2 86% (Revenue Requirement/Net Proceeds)

Year 3 Rate Base =$100 00 (Face Value of Bond)
Bond Discount fully amortized in Year 2

Result: Company recovers its costs

Example 2: 2 year, $100 bond, 8.00% coupon rate, sold at $110 (Premium)

Method 2 (Used by Staff): Applying incorrect cost rate

Year No.	Cash Flows From / To Investors	Debt in Rate Base at Beginning of Year	Revenue Requirements Cost Rate of 3 0% Applied to Beg - Year Rate Base	Interest Payments	Amortization of Bond Premium
0	($110 00)	-			
1	$8 00	$110 00	$3 30	$8 00	($4.70)
2	$108 00	$105.30	$3.16	$8.00	($4.84)
3		$100 46			
	Totals		$6.46	$16.00	($9.54)

Cost Rate Year 1 ($8-$5) or $3 / $100 = 3 00% (Revenue Requirement/Face Value of Bond)

Year 3 Rate Base =$100 46 (Does not Equal Face Value of Bond)
Bond Premium is not fully amortized in Year 2

Result: Company recovers more than its costs

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-12), Page 2 of 2

United Water Idaho, Inc.
Value Line Projected Return on Common Equity and 5-Year Projected Growth in EPS

Company	Return on Common Equity (October 29, 2004) 2004	2005	2004-2005 Average ROE	2007-2009 Projected Average ROE	2001-'03 to 2007-'09 Projected Growth Rate in EPS
			Percent	Percent	
American States Water Company	9.0 %	9.5 %	9.3 %	10.5 %	9.5 %
Aqua America, Inc	11.0	12.0	11.5	13.0	9.0
California Water Service Group	10.5	10.5	10.5	11.0	10.0
Average	10.2 %	10.7 %	10.4 %	11.5 %	9.5 %
Water Utility Industry	9.5 %	9.5 %	9.5 %	10.0 %	

Company	Return on Common Equity (January 28, 2005) 2004	2005	2004-2005 Average ROE	2007-2009 Projected Average ROE	2001-'03 to 2007-'09 Projected Growth Rate in EPS
			Percent	Percent	
American States Water Company	9.0 %	9.5 %	9.3 %	10.5 %	9.5 %
Aqua America, Inc	11.0	12.0	11.5	13.0	9.0
California Water Service Group	10.0	10.5	10.3	11.0	10.0
Average	10.0 %	10.7 %	10.4 %	11.5 %	9.5 %
Water Utility Industry	9.5 %	9.5 %	9.5 %	10.0 %	

Company	Return on Common Equity (April 29, 2005) 2005	2006	2005-2006 Average ROE	2008-2010 Projected Average ROE	2002-'04 to 2008-'10 Projected Growth Rate in EPS
			Percent	Percent	
American States Water Company	9.0 %	9.5 %	9.3 %	12.0 %	8.0 %
Aqua America, Inc	12.0	12.5	12.3	13.0	9.0
California Water Service Group	10.0	10.5	10.3	11.0	9.5
Average	10.3 %	10.8 %	10.6 %	12.0 %	8.8 %
Water Utility Industry	11.0 %	11.5 %	11.3 %	12.0 %	

Source of Information: Value Line Investment Survey, Octobedr 29, 2004, January 28, 2005 and April 29, 2005

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-13), Page 1 of 1

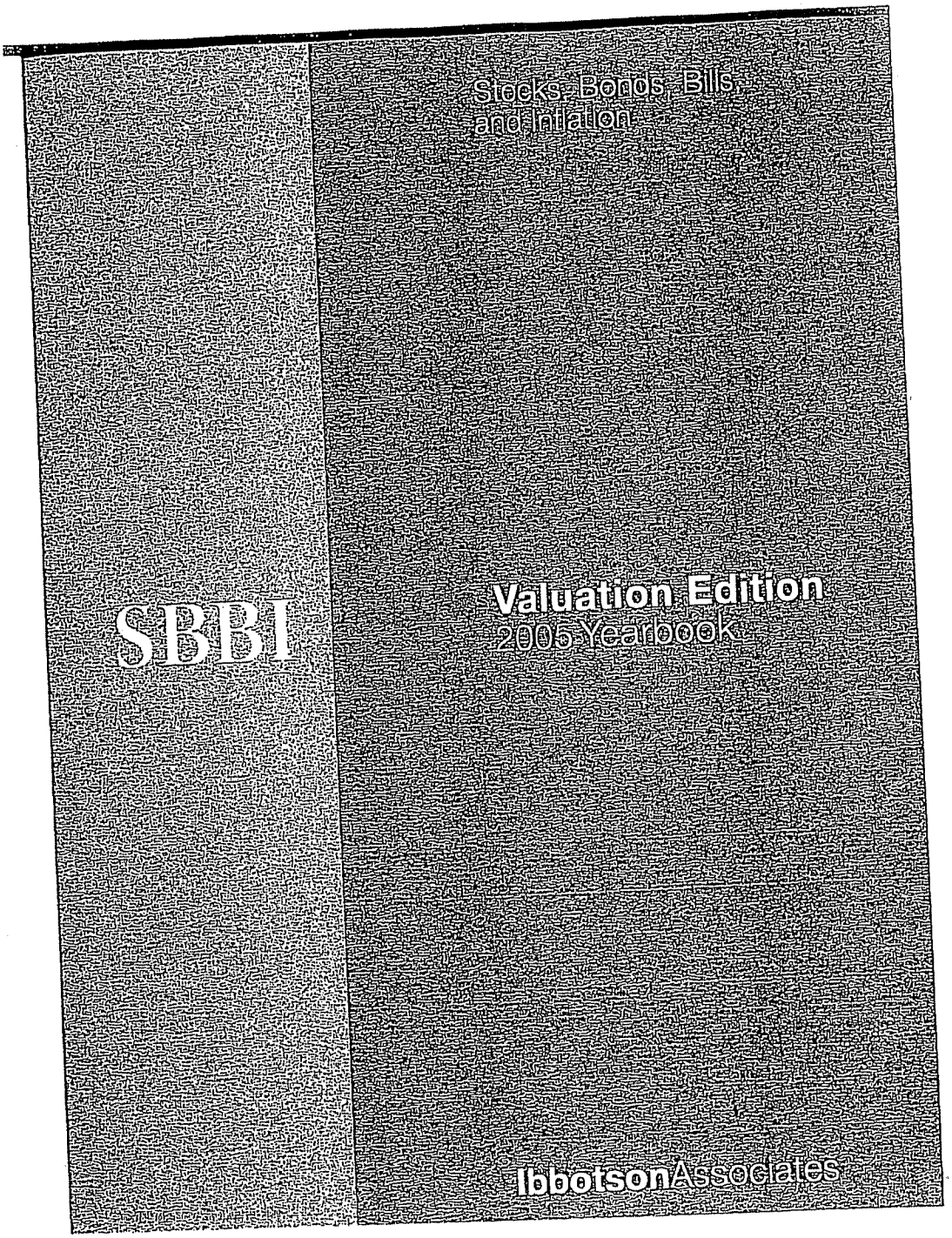
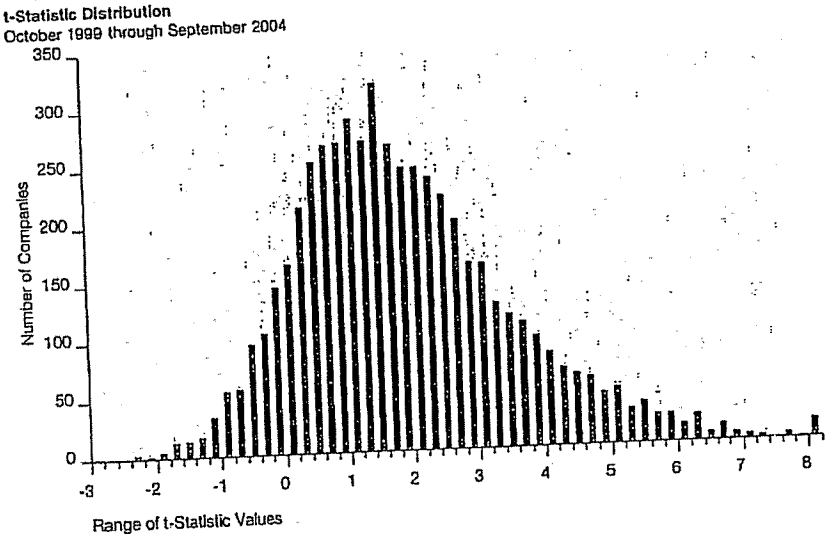


Exhibit No 18
Case No. UWI-W-04-04
Pauline M Ahern, AUS Consultants
Schedule (PMA-14), Page 1 of 3

thus, the beta of Company B is not statistically different than zero at that confidence level. If the regression provides a beta of 0.90 but is not statistically different than zero, then other measures of beta may need to be consulted (such as the company's peer betas or industry average betas).

To better illustrate the typical range of a beta's t-statistic, Graph 6-3 depicts the distribution of all t-statistics calculated with respect to the betas of over 5,000 companies included in Ibbotson's *Beta Book*. Since these beta calculations use 60 months of data, the critical value for the t-statistic is again 1.67 at the 90 percent confidence level. Recall that the absolute value is what is compared to the critical value; t-statistics above 1.67 or below –1.67 would therefore be considered statistically significant.

Graph 6-3



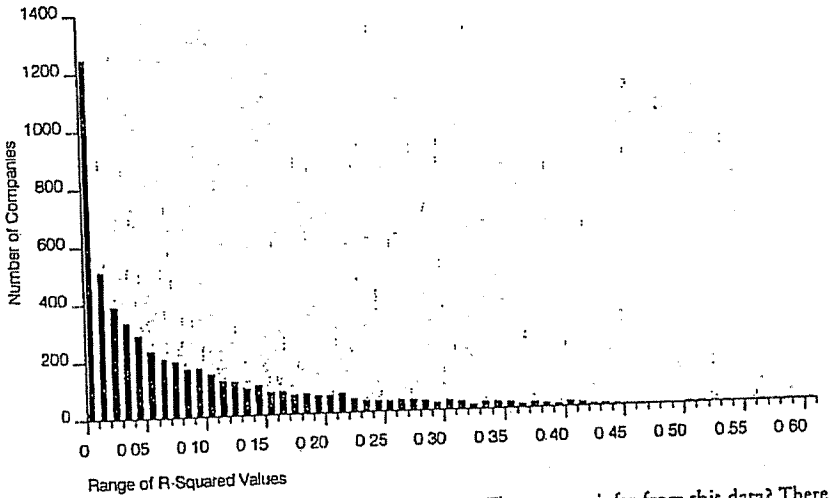
R-Squared

Another valuable regression statistic is the coefficient of determination, or R-squared. The R-squared is a statistic that measures the "goodness of fit" of the regression line and describes the percentage of variation in the dependent variable that is explained by the independent variable. The R-squared measure may vary from zero to one. An R-squared of 1.00 means that the independent variable explains 100 percent of the variation of the dependent variable. An R-squared of 0 indicates that the independent variable does not explain any of the variation of the dependent variable.

In terms of measuring beta via regression, a high R-squared means that the movements of the returns of the security are explained largely by the movements of the returns of the market. The R-squared for security betas are usually quite low. Graphs 6-4 and 6-5 show a distribution of R-squared statistics from Ibbotson Associates' *Beta Book*. The first graph shows the distribution of R-squared for all 5,000 plus companies included in the publication. The second graph shows the distribution of R-squared for the largest 100 companies, in terms of equity capitalization, that are included in the book.

Graph 6-4

R-Squared Distribution for Entire Population
October 1999 through September 2004



Note that most betas have an R-squared less than 0.3. What can we infer from this data? There may be other company- or industry-specific factors that drive security prices. While the CAPM includes only one factor in determining expected returns, it does not disallow the existence of others.

UNITED WATER IDAHO INC.
CASE NO. UWI-W-04-4
FIRST PRODUCTION REQUEST OF UNITED WATER
TO COMMISSION STAFF

Request No. 20: Please refer to page 8, line 13 through 16 of Ms. Carlock's direct testimony. Please provide the following:

a. The identity of the companies utilized by Ms. Carlock in her Comparable Earnings method.

b. A copy of the source documents, electronic spreadsheets and calculations relied upon by Ms. Carlock in developing the "reasonable return on equity attributed to United Water Idaho [of] 9.5% - 10.5% under the Comparable Earnings method.

Response to Request No. 20:

a. The companies utilized for the comparable earnings method include an analysis of water companies including those listed by Value Line and C. A. Turner as included in Company witness Ahern's Exhibit No. 12. A risk-adjusted comparison with Value Line electric utilities was also evaluated

b. The source documents for Value Line are available online and is also utilized by Company witness Ahern so she has access to this data. This data can be made available for review at the Commission office by setting up an appointment with Terri Carlock. Ms. Ahern's Exhibit No. 12 and workpapers were also utilized

Preparer/Sponsoring Witness: Terri Carlock
Telephone Number: (208) 334-0356
Title: Audit Section Supervisor

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-15), Page 1 of 1

UNITED WATER IDAHO INC.
CASE NO. UWI-W-04-4
FIRST PRODUCTION REQUEST OF UNITED WATER
TO COMMISSION STAFF

Request No. 21: Please refer to page 10, line 25 through page 11, line 5 of Ms. Carlock's direct testimony.

a. **Please provide all source documents, electronic spreadsheets and calculations supporting Ms. Carlock's conclusion of the cost of equity for United Water Idaho, Inc. using the Discounted Cash Flow method of between 8% and 10.5%.**

b. **Please identify the "various time intervals" referenced on line 2 of page 11 of Ms. Carlock's direct testimony.**

c. **Please identify the companies relied upon for the dividend yield of 3.4% to 3.5% and growth rate of 5% to 6% referenced in lines 4 and 5 of page 8.**

Response to Request No. 21:

a. Value Line (October 2004, January 2005, March 2005), Company witness Ahern's Exhibit No. 12 and workpapers were utilized. Ms. Carlock's judgment differs but the data is the same.

b. The various time intervals include 2004, 2005 and 2007 – 2009 estimates

c. The companies utilized include the water companies listed by Value Line and C A. Turner as included in Company witness Ahern's Exhibit No. 12

Preparer/Sponsoring Witness: Terri Carlock
Telephone Number: (208) 334-0356
Title: Audit Section Supervisor

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-16), Page 1 of 2

UNITED WATER IDAHO INC.
CASE NO. UWI-W-04-4
FIRST PRODUCTION REQUEST OF UNITED WATER
TO COMMISSION STAFF

Request No. 22: Please refer to page 10, lines 13 through 19 of Ms. Carlock's direct testimony.

a. Please provide all source documents, electronic spreadsheets and calculations supporting Ms. Carlock's conclusion of expected growth rate of 5% to 6% referenced on line 14 of page 8.

Response to Request No. 22: Value Line (October 2004, January 2005, March 2005), Company witness Ahern's Exhibit No. 12 and workpapers were utilized. Ms. Carlock's judgment differs but the data is the same.

Preparer/Sponsoring Witness: Terri Carlock
Telephone Number: (208) 334-0356
Title: Audit Section Supervisor

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-16), Page 2 of 2

United Water Idaho, Inc.
Summary of Cost of Capital and Fair Rate of Return
Based upon the Consolidated Capital Structure of United Waterworks Inc.
at December 31, 2004

Type of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	53.41 %	6.90 % (1)	3.69 %
Minority Interest (Preferred Stock)	0.13	5.00 (1)	0.01
Common Equity	46.46	11.10 (2)	5.16
Total	100.00 %		8.86 %

Notes:

(1) Company-provided.
(2) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2 of this Schedule, i.e. page 2 of Schedule (PMA-1) (Updated)

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-1), Page 1 of 18
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 1 of 43

United Water Idaho, Inc.
Brief Summary of Common Equity Cost Rate

No.	Principal Methods	Proxy Group of Six C.A. Turner Water Companies		Proxy Group of Three Value Line (Standard Edition) Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	10.4 %		10.6 %
2	Risk Premium Model (RPM) (2)	10.8		10.9
3	Capital Asset Pricing Model (CAPM) (3)	10.5		10.9
4.	Comparable Earnings Model (CEM) (4)	14.2		13.9
5	Range of Indicated Common Equity Cost Rate Before Business Risk Adjustment	10.6 %	--	11.0 %
6.	Business Risk Adjustment	0.20		0.30
7.	Range of Common Equity Cost Rate After Business Risk Adjustment	10.80 %	--	11.30 %
8	Midpoint of Common Equity Cost Rate After Business Risk Adjustment	11.10%		
9.	Recommended Common Equity Cost Rate	11.10%		

Notes: (1) From page 19 of this Schedule, i.e., Schedule (PMA-5) (Updated).
(2) From page 29 of this Schedule. i.e., page 1 of Schedule (PMA-9) (Updated)
(3) From page 37 of this Schedule, i.e. page 1 of Schedule (PMA-10) (Updated)
(4) From pages 41 and 43 of this Schedule. i.e., pages 2 and 4 of Schedule (PMA-11) (Updated)

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-1), Page 2 of 18
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 2 of 43

United Water Idaho, Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		1 Total Capitalization (incl. Short-Term Debt) for the Year 2003 (millions)	(times larger)	2 Market Capitalization on April 29, 2005 (1) (millions)	(times larger)	3 Applicable Decile of the NYSE/AMEX/ NASDAQ	4 Applicable Size Premium		5 Spread from Applicable Size Premium for (2)
1.	United Water Idaho, Inc.	$ 120.665 (3)							
a.	Based Upon the Proxy Group of Six C. A. Turner Water Companies			$ 127.708		10 (4)	6.41%	(5)	
b.	Based Upon the Proxy Group of Three Value Line (Standard Edition) Water Companies			$ 129.932		10 (4)	6.41%	(5)	
2.	Proxy Group of Six C. A. Turner Water Companies	$ 502.690 (6)	4.2 x	$ 670.824	5.3 x	7 - 8 (7)	2.61%	(8)	3.80%
3.	Proxy Group of Three Value Line (Standard Edition) Water Companies	$ 865.130 (9)	7.2 x	$ 1,194.083	9.2 x	6 (10)	1.75%	(11)	4.66%

page 4 for notes.

Decile	Number of Companies	Recent Total Market Capitalization (millions)	Recent Average Market (millions)
1 - Largest	172	$8,214,688.366	$47,759.816
2	177	1,722,153.325	9,729.680
3	199	894,917.814	4,497.075
4	209	548,389.454	2,623.873
5	219	400,381.543	1,828.226
6	257	325,662.936	1,267.171
7	300	264,131.617	880.439
8	372	219,976.996	591.336
9	589	230,476.080	391.301
10 - Smallest	1782	185,620.318	104.276

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United Water Idaho, Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE

Notes:

(1) From page 5 of this Schedule, i e , page 5 of Schedule (PMA-1) (Updated)

(2) Line No. 1 – Line No. 2 and Line No. 1 – Line No. 3 of Columns 3 and 4, respectively. For example, the 3.80% in Column 5, Line No. 2 is derived as follows: 3.80% = 6.41% - 2.61%.

(3) At June 30, 2004 Company-provided

(4) With an estimated market capitalization of $127.708 million (based upon the proxy group of six C. A. Turner water companies) or $129.932 million (based upon the proxy group of three Value Line (Standard Edition) water companies), United Water Idaho, Inc. falls in the 10th decile of the NYSE/AMEXNASDAQ which has an average market capitalization of $104.276 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule, i e , page 3 of Schedule (PMA-1) (Updated)

(5) Size premium applicable to the 10th decile of the NYSE/AMEXNASDAQ derived from the information shown on page 15 of this Schedule, i.e., page 15 of Schedule (PMA-10) (Updated)

(6) From page 1 of Schedule (PMA-3)

(7) With an estimated market capitalization of $670.824 million, the proxy group of six C. A. Turner water companies falls between the 7th and 8th deciles of the NYSE/AMEXNASDAQ which have an average market capitalization of $735.888 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule, i.e., page 3 of Schedule (PMA-1) (Updated)

(8) Average size premium applicable to the 7th and 8th deciles of the NYSE/AMEXNASDAQ derived from the information shown on page 15 of this Schedule, i.e., page 15 of Schedule (PMA-1) (Updated).

(9) From page 1 of Schedule (PMA-4)

(10) With an estimated market capitalization of $1,194.083 million, the proxy group of three Value Line (Standard Edition) water companies falls in the 6th decile of the NYSE/AMEXNASDAQ which has an average market capitalization of $1,267.171 million as shown in the table on the bottom half of page 3 of this Schedule, i e , page 3 of Schedule (PMA-1) (Updated)

(11) Size premium applicable to the 6th decile of the NYSE/AMEXNASDAQ derived from the information shown on page 15 of this Schedule, i e , page 15 of Schedule (PMA-1) (Updated).

Source of Information: Ibbotson Associates, Stocks, Bonds, Bills and Inflation – Valuation Edition – 2005 Yearbook, Chicago, IL, 2005

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United Water Idaho, Inc.
Market Capitalization of United Water Idaho, Inc.
for the Proxy Group of Six C. A. Turner Water Companies and
the Proxy Group of Three Value Line (Standard Edition) Water Companies as of

Company	1 Common Stock Shares Outstanding at December 31, 2004 (millions)	2 Book Value per Share at December 31, 2004 ($)	3 Total Common Equity at December 31, 2004 (millions)	4 Closing Stock Market Price on April 29, 2005	5 Market-to-Book Ratio at April 29, 2005 (2)	6 Market Capitalization on April 29, 2005 (3) (millions)
United Water Idaho, Inc.	NA	NA	$ 54.022 (4)	NA		
Based Upon the Proxy Group of Six C.A. Turner Water Companies					235.4 % (5)	$ 127.708 (6)
Based Upon the Proxy Group of Three Value Line (Standard Edition) Water Companies					240.5 % (7)	$ 129.932 (8)
Proxy Group of Six C. A. Turner Water Companies						
American States Water Co.	16.752	$ 15.011	$ 251.465	$ 25.400	169.2 %	$ 425.501
Aqua America, Inc.	93.365	7.847	746.468	26.700	340.3	2,540.780
Artesian Resources Corp.	3.556	13.480	53.327	32.210	196.3	165.740
California Water Services Group	16.367	16.659	267.605	33.310	212.1	609.956
Middlesex Water Company	11.359	6.375	85.129	17.350	207.2	197.079
York Water Company	6.897	6.918	48.037	20.310	291.2	139.976
Average	28.451	$ 11.225	$ 247.539	$ 24.950	235.4 %	$ 670.824
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.	16.752	$ 15.011	$ 251.465	$ 25.400	169.2 %	$ 425.501
Aqua America, Inc.	93.365	7.847	746.468	26.700	340.3	2,540.780
California Water Services Group	16.367	16.659	267.605	33.310	212.1	609.956
Average	43.501	$ 12.839	$ 429.179	$ 28.437	240.5 %	$ 1,194.083

NA = Not Available

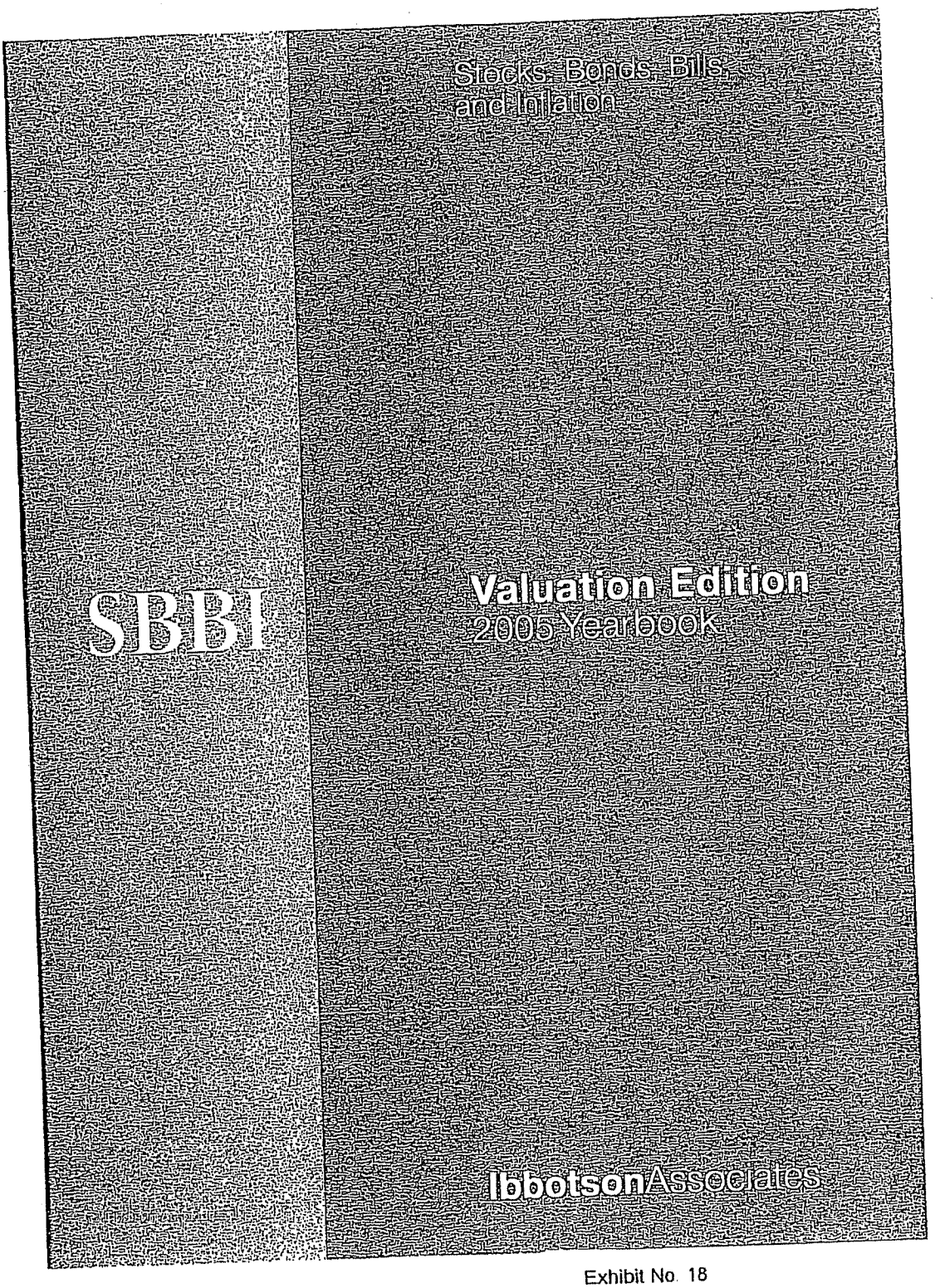
Notes:
(1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 5 * Column 3.
(4) Based upon allocating United Water Idaho, Inc.'s total capital at June 30, 2004 of $120.665 million by United Waterworks, Inc.'s common equity ratio based upon total investor provided capital, i.e., excluding customer deposits, at June 30, 2004 of 44.77% as derived below. $54.022 = $120.665 * 44.77%.

United Waterworks Inc.
Consolidated Capital Structure Based upon Investor Provided Capital at December 31, 2004

Type of Capital	Amount	Ratio
Long-term Debt	$ 234,435,000	55.10%
Minority Interest (Pfd. Stock)	561,000	0.13%
Common Equity	190,469,072	44.77%
Total	$ 425,465,072	100.00%

(5) The market-to-book ratio of United Water Idaho, Inc. at April 29, 2005 is assumed to be equal to the average market-to-book ratio at April 29, 2005 of the proxy group of six C. A. Turner Water Companies.
(6) United Water Idaho, Inc.'s common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at April 29, 2005 of the proxy group of six C. A. Turner water companies, 235.4%, and United Water Idaho, Inc.'s market capitalization at April 29, 2005 would therefore have been $127.708 million. ($127.708 = $54.022 * 235.4%).
(7) The market-to-book ratio of United Water Idaho, Inc. at April 29, 2005 is assumed to be equal to the average market-to-book ratio at April 29, 2005 of the proxy group of three Value Line (Standard Edition) Water Companies.
(8) United Water Idaho, Inc.'s common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at April 29, 2005 of the proxy group of three Value Line (Standard Edition) water companies, 240.5%, and United Water Idaho, Inc.'s market capitalization at April 29, 2005 would therefore have been $129.932 million. ($129.932 = $54.022 * 240.5%).

Source of Information: Company Annual Forms 10K
Yahoo.finance.com
Company-provided



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Chapter 7

Firm Size and Return

The Firm Size Phenomenon

One of the most remarkable discoveries of modern finance is that of a relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones. Many studies have looked at the effect of firm size on return.[1] In this chapter, the returns across the entire range of firm size are examined.

Construction of the Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices (CRSP) at the University of Chicago's Graduate School of Business. CRSP has refined the methodology of creating size-based portfolios and has applied this methodology to the entire universe of NYSE/AMEX/NASDAQ-listed securities going back to 1926.

The New York Stock Exchange universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depository Receipts, unit investment trusts, and Americus Trusts. All companies on the NYSE are ranked by the combined market capitalization of their eligible equity securities. The companies are then split into 10 equally populated groups, or deciles. Eligible companies traded on the American Stock Exchange (AMEX) and the Nasdaq National Market (NASDAQ) are then assigned to the appropriate deciles according to their capitalization in relation to the NYSE breakpoints. The portfolios are rebalanced, using closing prices for the last trading day of March, June, September, and December. Securities added during the quarter are assigned to the appropriate portfolio when two consecutive month-end prices are available. If the final NYSE price of a security that becomes delisted is a month-end price, then that month's return is included in the quarterly return of the security's portfolio. When a month-end NYSE price is missing, the month-end value of the security is derived from merger terms, quotations on regional exchanges, and other sources. If a month-end value still is not determined, the last available daily price is used.

Base security returns are monthly holding period returns. All distributions are added to the month-end prices, and appropriate price adjustments are made to account for stock splits and dividends. The return on a portfolio for one month is calculated as the weighted average of the returns for its individual stocks. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

Size of the Deciles

Table 7-1 reveals that the top three deciles of the NYSE/AMEX/NASDAQ account for most of the total market value of its stocks. Approximately two-thirds of the market value is represented by the first decile, which currently consists of 172 stocks, while the smallest decile accounts for just over one percent of the market value. The data in the second column of Table 7-1 are averages across all

1 Rolf W. Banz was the first to document this phenomenon. See Banz, Rolf W. "The Relationship Between Returns and Market Value of Common Stocks," *Journal of Financial Economics*, Vol. 9, 1981, pp. 3–18.

79 years. Of course, the proportion of market value represented by the various deciles varies from year to year.

Columns three and four give recent figures on the number of companies and their market capitalization, presenting a snapshot of the structure of the deciles near the end of 2004.

Table 7-1
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Size and Composition
1926-2004

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (In thousands)	Recent Percentage of Total Capitalization
1-Largest	63 31%	172	$8.214.688.366	63 16%
2	13.97%	177	1.722.153.325	13.24%
3	7 58%	199	894.917.914	6 88%
4	4 74%	209	548.389.454	4 22%
5	3 24%	219	400.381.543	3 08%
6	2 37%	257	325.662,936	2 50%
7	1 73%	300	264.131.617	2.03%
8	1 28%	372	219.976.996	1 69%
9	0 98%	589	230.476.080	1 77%
10-Smallest	0 80%	1.782	185.820.318	1 43%
Mid-Cap 3-5	15 56%	627	1.843.688.910	14 18%
Low-Cap 6-8	5 38%	929	809,771.549	6 23%
Micro-Cap 9-10	1 79%	2.371	416.296.398	3 20%

Historical average percentage of total capitalization shows the average, over the last 79 years, of the decile market values as a percentage of the total NYSE/AMEX/NASDAQ calculated each month. Number of companies in deciles. recent market capitalization of deciles. and recent percentage of total capitalization are as of September 30. 2004

Table 7-2 gives the current breakpoints that define the composition of the NYSE/AMEX/NASDAQ size deciles. The largest company and its market capitalization are presented for each decile. Table 7-3 shows the historical breakpoints for each of the three size groupings presented throughout this chapter. Mid-cap stocks are defined here as the aggregate of deciles 3–5. Based on the most recent data (Table 7-2), companies within this mid-cap range have market capitalizations at or below $6,241,953,000 but greater than $1,607,854,000. Low-cap stocks include deciles 6–8 and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below $1,607,854,000 but greater than $505,437,000. Micro-cap stocks include deciles 9–10 and include companies with market capitalizations at or below $505,437,000. The market capitalization of the smallest company included in the micro-capitalization group is currently $1,393,000.

Table 7-2

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization by Decile
September 30, 2004

Decile	Market Capitalization of Largest Company (in thousands)	Company Name
1-Largest	$342,087,219	General Electric Co
2	14,096,886	Agilent Technologies Inc
3	6,241,953	Tenet Healthcare Corp
4	3,464,104	Wellchoice Inc
5	2,231,707	OGE Energy Corp
6	1,607,854	Entercom Communications Corp
7	1,097,603	Vintage Petroleum Inc
8	746,219	Wabash National Corp
9	505,437	World Fuel Services Corp
10-Smallest	262,725	Mastec Inc

Source: Center for Research in Security Prices, University of Chicago

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles over 1926–2004 are presented in Table 7-4. Note from this exhibit that both the average return and the total risk, or standard deviation of annual returns, tend to increase as one moves from the largest decile to the smallest. Furthermore, the serial correlations of returns are near zero for all but the smallest two deciles. Serial correlations and their significance will be discussed in detail later in this chapter.

Graph 7-1 depicts the growth of one dollar invested in each of three NYSE/AMEX/NASDAQ groups broken down into mid-cap, low-cap, and micro-cap stocks. The index value of the entire NYSE/AMEX/NASDAQ is also included. All returns presented are value-weighted based on the market capitalizations of the deciles contained in each subgroup. The sheer magnitude of the size effect in some years is noteworthy. While the largest stocks actually declined in 1977, the smallest stocks rose more than 20 percent. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and tenth decile returns was far more substantial. This divergence in the performance of small and large company stocks is a common occurrence.

Table 7-3

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1926 to1965

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1926	$61.490	$14.040	$4.305	$14.100	$4.325	$43
1927	$65.281	$14.746	$4.450	$15.311	$4.496	$72
1928	$81,998	$18,975	$5.074	$19.050	$5.119	$135
1929	$107.085	$24.328	$5.875	$24.480	$5.915	$126
1930	$67.808	$13.050	$3.219	$13.068	$3.264	$30
1931	$42.607	$8.142	$1.905	$8.222	$1.927	$15
1932	$12.431	$2.170	$473	$2.196	$477	$19
1933	$40.298	$7.210	$1.830	$7.280	$1.875	$100
1934	$38.129	$6.669	$1.669	$6.734	$1.673	$68
1935	$37 631	$6.519	$1.350	$6.549	$1.383	$38
1936	$46.920	$11.505	$2.660	$11.526	$2.668	$98
1937	$51.750	$13,601	$3.500	$13.635	$3.539	$68
1938	$36.102	$8.325	$2,125	$8.372	$2.145	$60
1939	$35,784	$7.367	$1.697	$7.389	$1.800	$75
1940	$31.050	$7.990	$1.861	$8.007	$1.872	$51
1941	$31.744	$8.316	$2.086	$8.336	$2 087	$72
1942	$26.135	$6.870	$1.779	$6.875	$1.788	$82
1943	$43.218	$11.475	$3.847	$11.480	$3.903	$395
1944	$46.621	$13,066	$4.800	$13.068	$4.812	$309
1945	$55.268	$17.325	$6.413	$17.575	$6.428	$225
1946	$79.158	$24.192	$10.013	$24.199	$10.051	$829
1947	$57.830	$17.735	$6.373	$17.872	$6.380	$747
1948	$67,238	$19.575	$7.313	$19.651	$7.329	$784
1949	$55.506	$14.549	$5.037	$14.577	$5.108	$379
1950	$65.881	$18.675	$6.176	$18.750	$6.201	$303
1951	$82.517	$22.750	$7,567	$22.860	$7,598	$668
1952	$97.936	$25.452	$8.428	$25,532	$8.480	$480
1953	$98.595	$25.374	$8.156	$25.395	$8.168	$459
1954	$125.834	$29.645	$8.484	$29.707	$8.488	$463
1955	$170.829	$41.445	$12.353	$41.681	$12.366	$553
1956	$183.434	$46.805	$13.481	$46,886	$13.524	$1.122
1957	$192.861	$47.658	$13.844	$48.509	$13.848	$925
1958	$195.083	$46.774	$13.789	$46.871	$13.816	$550
1959	$253.644	$64.221	$19.500	$64.372	$19.548	$1.804
1960	$246.202	$61.485	$19.344	$61,529	$19.385	$831
1961	$296.251	$79.058	$23.562	$79.422	$23.613	$2.455
1962	$250.433	$58.866	$18.952	$59.143	$18.968	$1.018
1963	$308.438	$71,846	$23.819	$71.971	$23.822	$296
1964	$344.033	$79.343	$25.594	$79.508	$25.595	$223
1965	$363.759	$84.479	$28.365	$84.600	$28.375	$250

Source: Center for Research in Security Prices. University of Chicago

Table 7-3 (continued)

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1966 to 2004

	Capitalization of Largest Company (In thousands)			Capitalization of Smallest Company (In thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1966	$399.455	$99.578	$34.884	$99.935	$34.966	$381
1967	$459.170	$117.985	$42.267	$118,329	$42.313	$381
1968	$528.326	$149.261	$60.351	$150.128	$60.397	$592
1969	$517,452	$144.770	$54.273	$145,684	$54,280	$2,119
1970	$380.246	$94.025	$29.910	$94.047	$29.916	$822
1971	$542.517	$145.340	$45,571	$145.673	$45.589	$865
1972	$545.211	$139.647	$46.728	$139,710	$46.757	$1.031
1973	$424.584	$94,809	$29,601	$95.378	$29.606	$561
1974	$344.013	$75.272	$22.475	$75.853	$22,481	$444
1975	$465.763	$96.954	$28.140	$97,266	$28.144	$540
1976	$551.071	$116.184	$31.987	$116,212	$32.002	$564
1977	$573.084	$135,804	$39.192	$137.323	$39,254	$513
1978	$572,967	$159.778	$46.621	$160.524	$46.629	$830
1979	$661.336	$174.480	$49.088	$174.517	$49.172	$948
1980	$754.562	$194,012	$48.671	$194.241	$48.953	$549
1981	$954.665	$259.028	$71,276	$261.059	$71,289	$1,446
1982	$762.028	$205.590	$54.675	$206.536	$54,883	$1,060
1983	$1.200,680	$352,698	$103.443	$352.944	$103.530	$2.025
1984	$1.068.972	$314.650	$90.419	$315.214	$90.659	$2.093
1985	$1.432.342	$367,413	$93,810	$368.249	$94,000	$760
1986	$1.857.621	$444.827	$109.956	$445.648	$109,975	$706
1987	$2.059,143	$467.430	$112.035	$468,948	$112.125	$1.277
1988	$1.957,926	$420.257	$94.268	$421,340	$94.302	$696
1989	$2.147.608	$480,975	$100,285	$483.623	$100,384	$86
1990	$2,164.185	$472.003	$93.627	$474,065	$93.750	$132
1991	$2.129,863	$457.958	$87.586	$458.853	$87.733	$278
1992	$2,428.671	$500,346	$103.352	$501.050	$103.500	$510
1993	$2.711.068	$608.520	$137,945	$608.825	$137,987	$602
1994	$2.497.073	$601.552	$149.435	$602,552	$149,532	$598
1995	$2.793.761	$653.178	$158.011	$654.019	$158.063	$89
1996	$3.150.685	$763,377	$195.188	$763.812	$195.326	$1.043
1997	$3,511.132	$818.299	$230,472	$821.028	$230,554	$480
1998	$4,216.707	$934.264	$253,329	$936.727	$253.336	$1.671
1999	$4.251.741	$875.309	$218.336	$875,582	$218.368	$1.502
2000	$4.143.902	$840.000	$192.598	$840.730	$192.721	$1.462
2001	$5.252.063	$1,114.792	$269.275	$1.115.200	$270.391	$443
2002	$5.012.705	$1.143,845	$314.042	$1,144.452	$314,174	$501
2003	$4.794.027	$1.166,799	$330,608	$1,167.040	$330,797	$332
2004	$6.241,953	$1.607.854	$505.437	$1.607.931	$506,410	$1.393

Source: Center for Research in Security Prices University of Chicago

Table 7-4
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Summary Statistics of Annual Returns 1926–2004

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9 6%	11 4%	19 27%	0 09
2	10 9	13 2	22 00	0 03
3	11 3	13 8	23 81	-0 02
4	11 3	14 4	26 10	-0 02
5	11 7	15 0	26 94	-0 02
6	11 8	15 5	27 97	0 04
7	11 6	15 7	30 17	0 01
8	11 9	16 7	33 65	0 04
9	12 2	17 7	36 77	0 05
10-Smallest	14 0	21 8	45 67	0 15
Mid-Cap, 3–5	11 4	14 2	24 90	-0 02
Low-Cap, 6–8	11 8	15 8	29 68	0 03
Micro-Cap, 9–10	12 8	19 0	39 38	0 08
NYSE/AMEX/NASDAQ Total Value-Weighted Index	10 1	12 1	20 32	0 03

Source: Center for Research in Security Prices, University of Chicago

Aspects of the Firm Size Effect

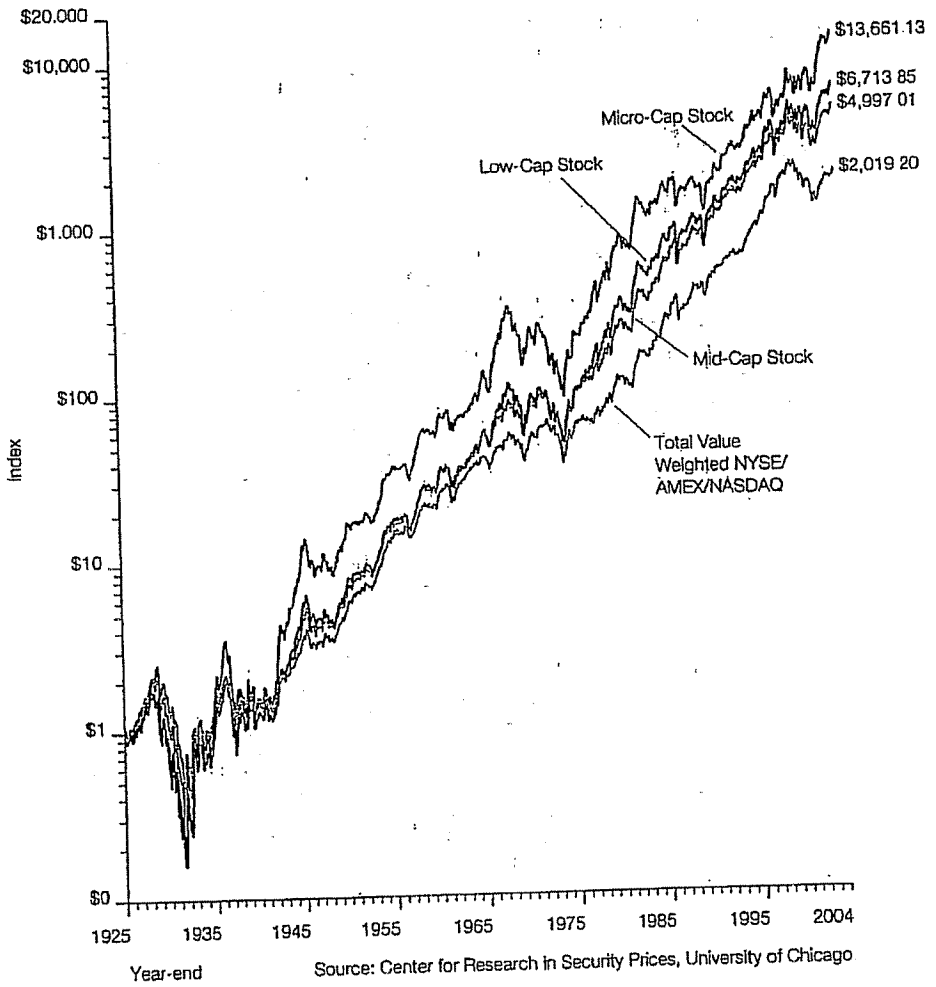
The firm size phenomenon is remarkable in several ways. First, the greater risk of small stocks does not, in the context of the capital asset pricing model (CAPM), fully account for their higher returns over the long term. In the CAPM, only systematic or beta risk is rewarded; small company stocks have had returns in excess of those implied by their betas.

Second, the calendar annual return differences between small and large companies are serially correlated. This suggests that past annual returns may be of some value in predicting future annual returns. Such serial correlation, or autocorrelation, is practically unknown in the market for large stocks and in most other equity markets but is evident in the size premia.

Third, the firm size effect is seasonal. For example, small company stocks outperformed large company stocks in the month of January in a large majority of the years. Such predictability is surprising and suspicious in light of modern capital market theory. These three aspects of the firm size effect—long-term returns in excess of systematic risk, serial correlation, and seasonality—will be analyzed thoroughly in the following sections.

Graph 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro- and Total Capitalization Stocks
1925-2004
Year-end 1925 = $1 00



Source: Center for Research in Security Prices, University of Chicago

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Long-Term Returns in Excess of Systematic Risk

The capital asset pricing model (CAPM) does not fully account for the higher returns of small company stocks. Table 7-5 shows the returns in excess of systematic risk over the past 79 years for each decile of the NYSE/AMEX/NASDAQ. Recall that the CAPM is expressed as follows:

$$k_s = r_f + (\beta_s \times ERP)$$

Table 7-5 uses the CAPM to estimate the return in excess of the riskless rate and compares this estimate to historical performance. According to the CAPM, the expected return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. The return in excess of the riskless rate is estimated in the context of the CAPM by multiplying the equity risk premium by β (beta). The equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (systematic risk).[2] Beta measures the extent to which a security or portfolio is exposed to systematic risk.[3] The beta of each decile indicates the degree to which the decile's return moves with that of the overall market.

A beta greater than one indicates that the security or portfolio has greater systematic risk than the market; according to the CAPM equation, investors are compensated for taking on this additional risk. Yet, Table 7-5 illustrates that the smaller deciles have had returns that are not fully explainable by their higher betas. This return in excess of that predicted by CAPM increases as one moves from the largest companies in decile 1 to the smallest in decile 10. The excess return is especially pronounced for micro-cap stocks (deciles 9–10). This size-related phenomenon has prompted a revision to the CAPM, which includes a size premium. Chapter 4 presents this modified CAPM theory and its application in more detail.

This phenomenon can also be viewed graphically, as depicted in the Graph 7-2. The security market line is based on the pure CAPM without adjustment for the size premium. Based on the risk (or beta) of a security, the expected return lies on the security market line. However, the actual historic returns for the smaller deciles of the NYSE/AMEX/NASDAQ lie above the line, indicating that these deciles have had returns in excess of that which is appropriate for their systematic risk.

2 The equity risk premium is estimated by the 79-year arithmetic mean return on large company stocks, 12.39 percent, less the 79-year arithmetic mean income-return component of 20-year government bonds as the historical riskless rate, in this case 5.22 percent. (It is appropriate, however, to match the maturity, or duration, of the riskless asset with the investment horizon.) See Chapter 5 for more detail on equity risk premium estimation.

3 Historical betas were calculated using a simple regression of the monthly portfolio (decile) total returns in excess of the 30-day U.S. Treasury bill total returns versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2004. See Chapter 6 for more detail on beta estimation.

Table 7-5

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2004

Decile	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0 91	11 39%	6 16%	6 53%	-0 37%
2	1 04	13 24%	8 02%	7 42%	0 60%
3	1 10	13 84%	8 62%	7 86%	0 75%
4	1 13	14 38%	9 15%	8 08%	1 07%
5	1.16	14.96%	9.74%	8.30%	1.44%
6	1 18	15 46%	10 23%	8 48%	1 75%
7	1 23	15 67%	10.45%	8 83%	1 61%
8	1 28	16 74%	11 51%	9 15%	2 36%
9	1 34	17 71%	12 48%	9 62%	2 86%
10-Smallest	1 41	21 77%	16 54%	10 14%	6 41%
Mid-Cap. 3-5	1 12	14 19%	8 96%	8 01%	0 95%
Low-Cap. 6-8	1 22	15 76%	10 54%	8 73%	1 81%
Micro-Cap. 9-10	1 36	18 97%	13 74%	9 72%	4 02%

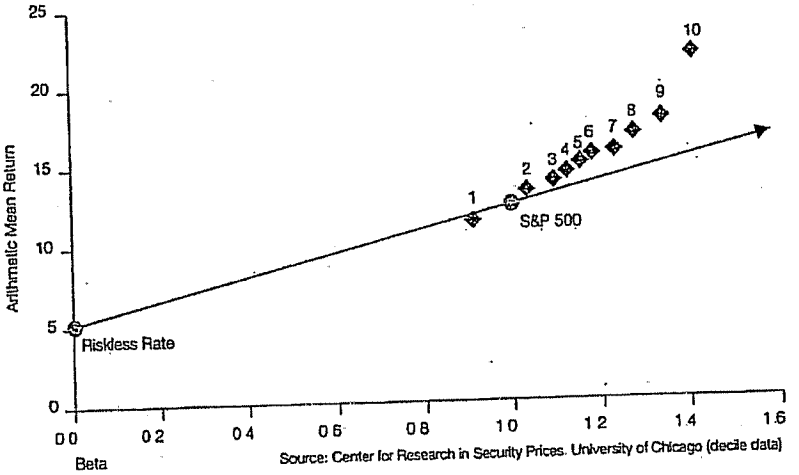
*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U S Treasury bill, January 1926–December 2004

**Historical riskless rate is measured by the 79-year arithmetic mean income return component of 20-year government bonds (5 22 percent)

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12 39 percent) minus the arithmetic mean income return component of 20-year government bonds (5 22 percent) from 1926–2004.

Graph 7-2

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2004



Source: Center for Research in Security Prices, University of Chicago (decile data)

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Further Analysis of the 10th Decile

The size premia presented thus far do a great deal to explain the return due solely to size in publicly traded companies. However, by splitting the 10th decile into two size groupings we can get a closer look at the smallest companies. This magnification of the smallest companies will demonstrate whether the company size to size premia relationship continues to hold true.

As previously discussed, the method for determining the size groupings for size premia analysis was to take the stocks traded on the NYSE and break them up into 10 deciles, after which stocks traded on the AMEX and NASDAQ were allocated into the same size groupings. This same methodology was used to split the 10th decile into two parts: 10a and 10b, with 10b being the smaller of the two. This is equivalent to breaking the stocks down into 20 size groupings, with portfolios 19 and 20 representing 10a and 10b.

Table 7-7 shows that the pattern continues; as companies get smaller their size premium increases. There is a noticeable increase in size premium from 10a to 10b, which can also be demonstrated visually in Graph 7-3. This can be useful in valuing companies that are extremely small. Table 7-6 presents the size, composition, and breakpoints of deciles 10a and 10b. First, the recent number of companies and total decile market capitalization are presented. Then the largest company and its market capitalization are presented.

Breaking the smallest decile down lowers the significance of the results compared to results for the 10th decile taken as a whole, however. The same holds true for comparing the 10th decile with the Micro-Cap aggregation of the 9th and 10th deciles. The more stocks included in a sample the more significance can be placed on the results. While this is not as much of a factor with the recent years of data, these size premia are constructed with data back to 1926. By breaking the 10th decile down into smaller components we have cut the number of stocks included in each grouping. The change over time of the number of stocks included in the 10th decile for the NYSE/AMEX/NASDAQ is presented in Table 7-8. With fewer stocks included in the analysis early on, there is a strong possibility that just a few stocks can dominate the returns for those early years.

While the number of companies included in the 10th decile for the early years of our analysis is low, it is not too low to still draw meaningful results even when broken down into subdivisions 10a and 10b. All things considered, size premia developed for deciles 10a and 10b are significant and can be used in cost of capital analysis. These size premia should greatly enhance the development of cost of capital analysis for very small companies.

Table 7-6

Size-Decile Portfolios 10a and 10b of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization
September 30, 2004

Decile	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Market Capitalization of Largest Company (in thousands)	Company Name
10a	532	$98,581,341	$262,725	Mastec Inc
10b	1,261	$83,633,980	$143,916	Rex Stores Corp

Note: These numbers may not aggregate to equal decile 10 figures.
Source: Center for Research in Security Prices, University of Chicago

Table 7-7

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926–2004

	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0 91	11 39%	6 16%	6 53%	-0 37%
2	1 04	13 24%	8 02%	7 42%	0 60%
3	1 10	13 84%	8 62%	7 86%	0 75%
4	1 13	14 38%	9 15%	8 08%	1 07%
5	1 16	14 96%	9 74%	8 30%	1 44%
6	1 18	15 46%	10 23%	8 48%	1 75%
7	1 23	15 67%	10 45%	8 83%	1 61%
8	1 28	16 74%	11 51%	9 15%	2 36%
9	1 34	17 71%	12 48%	9 62%	2 86%
10a	1 42	19 95%	14 73%	10 19%	4 54%
10b-Smallest	1 39	25 13%	19 90%	10 00%	9 90%
Mid-Cap. 3-5	1 12	14 19%	8 96%	8 01%	0 95%
Low-Cap. 6-8	1 22	15 76%	10 54%	8 73%	1 81%
Micro-Cap. 9-10	1 36	18 97%	13 74%	9 72%	4 02%

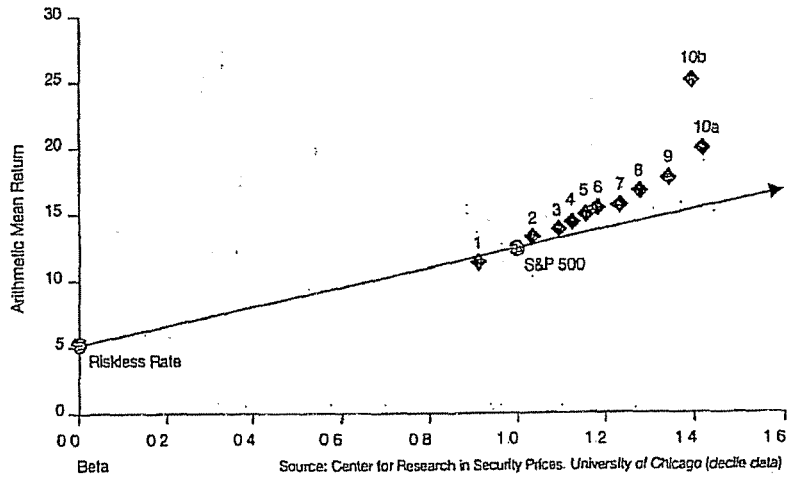
*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U S Treasury bill. January 1926–December 2004

**Historical riskless rate is measured by the 79-year arithmetic mean income return component of 20-year government bonds (5 22 percent)

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12 39 percent) minus the arithmetic mean income return component of 20-year government bonds (5 22 percent) from 1926–2004

Graph 7-3

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926-2004



Source: Center for Research in Security Prices. University of Chicago (decile data)

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Table 7-8
Historical Number of Companies for NYSE/AMEX/NASDAQ Decile 10

Sept.	Number of Companies
1926	52*
1930	72
1940	78
1950	100
1960	109
1970	865
1980	685
1990	1,814
2000	1,927
2004	1,762

*The fewest number of companies was 49 in March 1926

Source: Center for Research in Security Prices, University of Chicago

Alternative Methods of Calculating the Size Premia

The size premia estimation method presented above makes several assumptions with respect to the market benchmark and the measurement of beta. The impact of these assumptions can best be examined by looking at some alternatives. In this section we will examine the impact on the size premia of using a different market benchmark for estimating the equity risk premia and beta. We will also examine the effect on the size premia study of using sum beta or an annual beta.[4]

Changing the Market Benchmark

In the original size premia study, the S&P 500 is used as the market benchmark in the calculation of the realized historical equity risk premium and of each size group's beta. The NYSE total value-weighted index is a common alternative market benchmark used to calculate beta. Table 7-9 uses this market benchmark in the calculation of beta. In order to isolate the size effect, we require an equity risk premium based on a large company stock benchmark. The NYSE deciles 1–2 large company index offers a mutually exclusive set of portfolios for the analysis of the smaller company groups: mid-cap deciles 3–5, low-cap deciles 6–8, and micro-cap deciles 9–10. The size premia analyses using these benchmarks are summarized in Table 7-9 and depicted graphically in Graph 7-4.

For the entire period analyzed, 1926–2004, the betas obtained using the NYSE total value-weighted index are higher than those obtained using the S&P 500. Since smaller companies had higher betas using the NYSE benchmark, one would expect the size premia to shrink. However, as was illustrated in Chapter 5, the equity risk premium calculated using the NYSE deciles 1–2 benchmark results in a value of 6.40, as opposed to 7.17 when using the S&P 500. The effect of the higher betas and lower equity risk premium cancel each other out, and the resulting size premia in Table 7-9 are slightly higher than those resulting from the original study.

4 Sum beta is the method of beta estimation described in Chapter 6 that was developed to better account for the lagged reaction of small stocks to market movements. The sum beta methodology was developed for the same reason that the size premia were developed; small company betas were too small to account for all of their excess returns.

United Water Idaho, Inc.
Indicated Common equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

Based upon Historical and Projected Growth in DPS, EPS, and BR+SV

	1	2	3	4	5
	Average Dividend Yield (1)	Dividend Growth Component (2)	Adjusted Dividend Yield (3)	Growth Rate (4)	Indicated Common Equity Cost Rate (5)
Proxy Group of Six C. A. Turner Water Companies					
American States Water Co	3.5 %	0.1 %	3.6 %	4.2 %	7.8 %
Aqua America, Inc.	2.0	0.1	2.1	10.1	12.2
Artesian Resources Corp.	3.3	0.1	3.4	5.0	8.2
California Water Services Group	3.4	0.1	3.5	5.2	8.7
Middlesex Water Company	3.9	0.1	4.0	3.3	7.3
York Water Company	3.2	0.1	3.3	5.1	8.4
Average	3.2 %	0.1 %	3.3 %	5.8 %	10.0 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.5 %	0.1 %	3.6 %	4.2 %	7.8 %
Aqua America, Inc.	2.0	0.1	2.1	10.1	12.2
California Water Services Group	3.4	0.1	3.5	5.2	8.7
Average	3.0 %	0.1 %	3.1 %	8.5 %	10.6 % (6)

Based upon Projected Growth in EPS

	1	2	3	4	5
	Average Dividend Yield (1)	Dividend Growth Component (2)	Adjusted Dividend Yield (3)	Growth Rate (4)	Indicated Common Equity Cost Rate (5)
Proxy Group of Six C. A. Turner Water Companies					
American States Water Co	3.5 %	0.1 %	3.6 %	5.5 %	9.1 %
Aqua America, Inc.	2.0	0.1	2.1	9.4	11.5
Artesian Resources Corp	3.3	0.1	3.4	8.5	11.9
California Water Services Group	3.4	0.1	3.5	8.0	11.5
Middlesex Water Company	3.9	0.1	4.0	6.0	10.0
York Water Company	3.2	0.1	3.3	7.3	10.6
Average	3.2 %	0.1 %	3.3 %	7.5 %	10.8 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co	3.5 %	0.1 %	3.6 %	5.5 %	9.1 %
Aqua America, Inc.	2.0	0.1	2.1	9.4	11.5
California Water Services Group	3.4	0.1	3.5	8.0	11.5
Average	3.0 %	0.1 %	3.1 %	7.6 %	10.7 % (6)
Conclusion					
Proxy Group of Six C. A. Turner Water Companies					10.4 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					10.6 %

Notes:
(1) From page 20 of this Schedule, i.e., Schedule (PMA-6) (Updated).
(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 21 of this Schedule, i.e., page 1 of Schedule (PMA-7) (Updated)) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment Thus, for American States Water Co., 3.5% x (1/2 x 5.5%) = 0.1%
(3) Column 1 + Column 2.
(4) From page 21 of this Schedule, i.e., page 1 of Schedule (PMA-7) (Updated).
(5) Column 3 + Column 4.
(6) Includes only those indicated common equity cost rates which are greater than 8.5%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.5% (from page 20 of this Schedule, i.e., page 1 of Schedule (PMA-6) (Updated))

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United Water Idaho, Inc.
Derivation of Dividend Yield for Use in the
Discounted Cash Flow Model

	Dividend Yield		
	Spot (04/29/04) (1)	Average of Last 3 Months (2)	Average Dividend Yield (3)
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	3.5 %	3.5 %	3.5 %
Aqua America, Inc.	1.9	2.1	2.0
Artesian Resources Corp.	3.3	3.2	3.3
California Water Services Group	3.4	3.4	3.4
Middlesex Water Company	3.9	3.8	3.9
York Water Company	3.1	3.2	3.2
Average	3.2 %	3.2 %	3.2 %
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	3.5	3.5 %	3.5 %
Aqua America, Inc	1.9	2.1	2.0
California Water Services Group	3.4	3.4	3.4
Average	2.9 %	3.0 %	3.0 %

Notes: (1) The spot dividend yield is the current annualized dividend per share divided by the spot market price on 04/29/04.

(2) The average 3-month dividend yield was computed by relating the indicated annualized dividend rate and market price on the last trading day of each of the three months ended April 29, 2005

(3) Equal weight has been given to the 3-month average and spot dividend yield This provides recognition of current conditions, but does not place undue emphasis thereon.

Source of Information: Standard & Poor's Compustat Services, Inc , PC Plus
Research Insight Database
finance.yahoo.com

Exhibit No. 12
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Case No. UWI-W-04-04
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Schedule (PMA-8), Page 1 of 12
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Exhibit No. 12
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Exhibit No. 18
Case No. UWI-W-04-04
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United Water Idaho, Inc.
Calculation of Projected BR + SV

	1	2	3	4	5	6	7	8	9	10	11
	Common Shares Outstanding (1) (000,000)			Projected 2008 - 2010 (1)							
	Actual 2004	Projected 2008-2010	S Factor (2)	High Stock Price	Low Stock Price	Book Value	Average Stock Price (3)	V Factor (4)	SV (5)	BR (5)	BR + SV (7)
Proxy Group of Six C. A. Turner Water Companies											
American States Water Co.	16.77	20.00	3.6 %	$35.00	$20.00	$17.65	$27.50	35.8 %	1.3 %	6.7 %	8.0 %
Aqua America, Inc.	95.38	100.00	1.0	35.00	25.00	9.70	30.00	67.7	0.7	6.1	6.8
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Services Group	18.37	23.00	4.6	40.00	30.00	19.55	35.00	44.1	2.0	4.8	6.8
Middlesex Water Company	11.36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
York Water Company	6.69	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			3.1 %					49.2 %	1.3 %	5.9 %	7.2 %
Proxy Group of Three Value Line (Standard Edition) Water											
American States Water Co.	16.77	20.00	3.6 %	$35.00	$20.00	$17.65	$27.50	35.8 %	1.3 %	6.8 %	8.1 %
Aqua America, Inc.	95.38	100.00	1.0	35.00	25.00	9.70	30.00	67.7	0.7	6.0	6.7
California Water Services Group	18.37	23.00	4.6	40.00	30.00	19.55	35.00	44.1	2.0	4.9	6.9
Average			3.1 %					49.2 %	1.3 %	5.9 %	7.2 %

NA = Not Available

Notes:
(1) From pages 24 through 28 of this Schedule, i.e., pages 8 through 12 of Schedule (PMA-8) (Updated).
(2) The S Factor is the six or five year compound growth rate between the 2002 and 2007 (mid-point of 2006-2008 projection) common shares outstanding.
(3) The Average Stock Price is the average of column 4 and column 5.
(4) (1 - (column 6 / column 7))
(5) Column 3 * column 8.
(6) From page 23 column 14 of this Schedule, i.e., page 7 of Schedule (PMA-8) (Updated).
(7) Column 9 + column 10.
(8) Excludes negatives

Source of Information: Value Line Investment Survey, April 29, 2005

United Water Idaho Inc.
Embedded Internal Growth Rate

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	2004			2008-2010					2008-2010					
	Common Equity (%) (1)	Total Capital ($ mil) (1)	Common Equity ($ mil) (2)	Common Equity (%) (1)	Total Capital ($ mil) (1)	Common Equity ($ mil) (3)	Annual Common Equity Growth Rate (4)	ROE Adjustment Factor (8)	Return on Common Equity (1)	Return on Average Common Equity (6)	EPS (1)	DPS (1)	Retention Rate (7)	Projected Internal Growth (8)
Proxy Group of Six C.A. Turner Water Companies														
American States Water Co.	52.30 %	$480.40	$251.25	49.00 %	$735.00	$352.80	7.02 %	1.03 %	12.00 %	12.38 %	$2.10	$0.98	54.3 %	6.7 %
Aqua America, Inc.	50.00	1,497.30	748.65	60.00	1,615.00	969.00	5.30	1.03	13.00	13.39	1.25	0.69	45.6	6.1
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Service Group	60.80	685.80	287.48	60.00	900.00	469.00	9.38	1.04	11.00	11.44	2.15	1.24	42.3	4.8
Middlesex Water Company	NA	NA	83.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
York Water Company	60.00	69.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average														6.8 %
Proxy Group of Three Value Line Standard Edition Water Companies														
American States Water Co.	52.30 %	$480.40	$251.25	52.30 %	$735.00	$384.41	8.88 %	1.04 %	12.00 %	12.48 %	$2.10	$0.98	54.3 %	6.8 %
Aqua America, Inc.	50.00	1,497.30	748.65	50.00	1,615.00	807.50	1.52	1.01	13.00	13.13	1.25	0.69	45.6	6.0
California Water Services Group	60.80	685.80	287.48	60.80	900.00	467.20	8.72	1.05	11.00	11.55	2.16	1.24	42.3	4.8
Average														5.9 %

NA = Not Available

Notes:
(1) From pages 24 through 28 of this Schedule, i.e., pages 8 through 12 of Schedule (PMA-8) (Updated).
(2) Column 1 * column 2.
(3) Column 4 * column 6.
(4) Five year compound growth rate in common equity from 2004 to 2008-2010 or (((column 6 / column 3) ^ (1/5)) - 1)).
(5) 2 * ((1 + column 7) / (2 + column 7)) .
(6) Column 8 * column 9.
(7) 1 - (column 12 / column 11).
(8) Column 10 * column 13.

Source of Information: Value Line Investment Survey, April 29, 2005

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AMER. STATES WATER NYSE-AWR

RECENT PRICE 24.96 | P/E RATIO 19.8 (Trailing: 20.8 / Median: 16.0) | RELATIVE P/E RATIO 1.11 | DIV'D YLD 3.6% | VALUE LINE

TIMELINESS 4 Raised 11/7/03
SAFETY 3 New 2/4/00
TECHNICAL 3 Lowered 2/25/05
BETA .70 (1.00 = Market)

2008-10 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+40%)	12%
Low	20	(-20%)	-1%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	2Q2004	3Q2004	4Q2004
to Buy	45	52	57
to Sell	25	25	29
Hld's(000)	5584	5038	5063

High: 14.7 14.0 16.1 17.1 19.5 26.5 25.3 26.4 29.0 29.0 26.8 27.6
Low: 10.2 10.5 12.5 13.6 14.1 14.8 16.7 19.0 20.3 21.6 20.8 24.3

LEGENDS
1.25 x Dividends p sh divided by Interest Rate
Relative Price Strength
3-for-1 split 10/03
3-for-2 split 6/02
Options: No
Shaded area indicates recession

Percent shares traded: 6, 4, 2

Target Price Range 2008 | 2009 | 2010: 64, 48, 40, 32, 24, 20, 16, 12, 8, 6

% TOT. RETURN 3/05

	THIS STOCK	VL ARITH. INDEX
1 yr	7.5	7.7
3 yr	18.7	32.5
5 yr.	51.4	62.6

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	© VALUE LINE PUB., INC.	08-10
9.12	9.58	9.15	10.10	9.27	10.43	11.03	11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	13.60	14.10	14.70	Revenues per sh	16.00
1.44	1.49	1.78	1.81	1.67	1.68	1.75	1.75	1.85	2.04	2.26	2.20	2.53	2.54	2.08	2.22	2.65	2.95	"Cash Flow" per sh	3.70
.92	.94	1.19	1.15	1.11	.95	1.03	1.13	1.04	1.06	1.19	1.28	1.35	1.34	.78	1.05	1.35	1.55	Earnings per sh A	2.10
.69	.72	.73	.77	.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.89	.90	.91	Div'd Decl'd per sh B■	.96
2.46	2.53	2.77	2.31	1.90	2.43	2.19	2.40	2.58	3.11	4.30	3.03	3.18	2.68	3.76	5.02	5.15	5.25	Cap'l Spending per sh	5.50
7.31	7.54	8.39	8.85	9.95	10.07	10.29	11.01	11.24	11.48	11.82	12.74	13.22	14.05	13.97	14.98	15.20	15.35	Book Value per sh	17.65
9.39	9.43	9.91	9.96	11.71	11.77	11.77	13.33	13.44	13.44	13.44	15.12	16.12	16.18	15.21	16.77	17.35	18.60	Common Shs Outst'g C	20.00
9.7	10.2	8.8	10.6	13.4	12.6	11.6	12.6	14.5	15.5	17.1	15.9	16.7	18.3	31.9	23.2	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	13.0
.73	.76	.66	.64	.79	.84	.78	.79	.84	.81	.97	1.03	.86	1.00	1.82	1.23			Relative P/E Ratio	.85
7.7%	7.5%	7.0%	6.3%	5.3%	6.6%	6.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%	3.7%			Avg Ann'l Div'd Yield	3.5%
						129.8	151.5	153.8	168.1	173.4	184.0	197.5	209.2	212.7	228.0	245	265	Revenues ($mill)	320
						12.2	13.5	14.1	14.6	16.1	18.0	20.4	20.3	11.9	16.4	23.0	28.0	Net Profit ($mill)	42.0
						41.9%	43.3%	41.1%	40.9%	46.0%	45.7%	43.0%	38.9%	43.5%	37.7%	40.0%	40.0%	Income Tax Rate	40.0%
						--	--	--	--	--	--	--	--	--	--	Nil	Nil	AFUDC % to Net Profit	Nil
						46.6%	41.9%	43.0%	43.6%	51.0%	47.5%	54.9%	52.0%	52.0%	47.7%	51.0%	51.0%	Long-Term Debt Ratio	52.0%
						52.5%	57.3%	56.3%	55.7%	48.4%	51.9%	44.7%	48.0%	48.0%	52.3%	49.0%	49.0%	Common Equity Ratio	48.0%
						230.6	256.0	268.4	277.1	328.2	371.1	447.6	444.4	442.3	480.4	535	600	Total Capital ($mill)	735
						335.0	357.8	383.6	414.8	449.6	509.1	539.8	563.3	602.3	664.2	710	770	Net Plant ($mill)	915
						7.2%	6.9%	6.9%	7.0%	6.6%	6.4%	6.1%	6.5%	4.6%	4.9%	7.5%	8.0%	Return on Total Cap'l	7.5%
						8.9%	9.0%	9.2%	9.4%	10.0%	9.2%	10.1%	9.5%	5.6%	6.5%	9.0%	9.5%	Rum on Str. Equity	12.0%
						10.0%	9.0%	9.2%	9.4%	10.1%	9.3%	10.1%	9.5%	5.6%	6.5%	9.0%	9.5%	Return on Com Equity	12.0%
						2.1%	2.4%	1.8%	2.1%	2.9%	3.0%	3.6%	3.3%	NMF	NMF	2.5%	4.0%	Retained to Com Eq	6.5%
						79%	73%	80%	78%	72%	68%	65%	85%	113%	91%	68%	59%	All Div'ds to Net Prof	45%

CAPITAL STRUCTURE as of 12/31/04
Total Debt $274.8 mil. Due in 5 Yrs $65.0 mil.
LT Debt $228.8 mil. LT Interest $18.0 mil.
(Total interest coverage: 2.6x)

Leases, Uncapitalized: None
Pension Assets-12/04 $51.3 mil.
Oblig. $70.3 mil.
Pfd Stock None. Pfd Div'd None

Common Stock 16,768,396 shs
as of 3/11/05
MARKET CAP: $425 million (Small Cap)

CURRENT POSITION (SMILL.)

	2002	2003	12/31/04
Cash Assets	18.4	12.8	4.3
Receivables	10.8	11.8	14.3
Inventory (Avg Cst)	9	1.4	1.5
Other	21.7	32.4	32.9
Current Assets	51.8	60.4	53.0
Accts Payable	11.6	18.8	18.2
Debt Due	48.3	56.8	45.9
Other	19.6	20.3	22.2
Current Liab.	79.5	95.90	86.3
Fix. Chg. Cov.	285%	255%	200%

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '02-'04 to '08-'10
Revenues	3.5%	4.0%	2.0%
"Cash Flow"	3.0%	5.0%	5.0%
Earnings	--	1.5%	8.0%
Dividends	1.5%	1.0%	1.5%
Book Value	4.5%	4.0%	3.5%

Calendar	QUARTERLY REVENUES ($ mill) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2002	44.5	52.6	61.6	50.3	209.2
2003	46.7	51.8	63.7	50.5	212.7
2004	46.7	59.3	69.0	53.0	228.0
2005	50.0	63.0	73.0	59.0	245
2006	55.0	68.0	78.0	64.0	265

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2002	.25	.36	.50	.23	1.34
2003	.20	.19	.51	d.12	.78
2004	.00	.30	.52	.16	1.05
2005	.20	.35	.55	.25	1.35
2006	.25	.40	.60	.30	1.55

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.217	.217	.217	.217	.87
2002	.217	.217	.217	.221	.87
2003	.221	.221	.221	.221	.88
2004	.221	.221	.221	.225	.89
2005	.225				

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Southern California Water Company, it supplies water to 75 communities in 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to approximately 22,000 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/00); 11,400 customers. Has roughly 525 employees. Off. & dir. own 2.4% of common stock (4/05 Proxy). Chairman: Lloyd Ross. President & CEO: Floyd Wicks. Incorporated: CA. Addr.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel.: 909-394-3600. Web: www.aswater.com.

An improving regulatory environment is painting a positive backdrop for American States Water. Indeed, more favorable and timely rate request decisions by the California Public Utility Commission (CPUC) helped the company post $0.16 share net in the fourth quarter, versus a loss of $0.12 last year, despite unseasonably rainy weather. We look for the current regulatory landscape to get even better at the urging of Governor Schwarzenegger. He recently replaced two regulatory commissioners, considered to be antagonists of rate relief for utilities, with more business friendly members. The CPUC has already approved rate increases for Region I and II customer areas, which should boost AWR's top line by more than $5 million. This relief along with more normal weather ought to fuel better-than 25% earnings growth this year.

Earnings growth should tail off a bit in 2006. We are concerned that the company's strapped financials will become a hindrance to growth. Infrastructure costs are growing higher everyday and do not look as though they will be receding anytime soon. With only minimal cash on hand, AWR will likely be forced to sell stock and debt to fund these expenditures. Such a development would undoubtedly dilute earnings, despite brighter top-line prospects. We, therefore, look for American's earnings growth rate to slow to 15% in 2006. However, there might be a catalyst on the horizon. The utility filed a general rate case for region III during the first quarter. Region III is its largest service area with roughly 40% of AWR's customer base. The company is requesting a 24% revenue increase, effective January 2006. If a favorable ruling is handed down, our share-net figure would probably prove too conservative.

Most investors will want to look elsewhere. AWR stock offers minimal appreciation potential to 2008-2010 and is ranked 4 (Below Average) for Timeliness. Although consolidating industry trends could provide some opportunities for the company, a dearth of funds limits the likelihood of such measures. That said, income-oriented investors might want to consider the issue because AWR offers an above average dividend yield.

Andre J. Costanza *April 29, 2005*

(A) Primary earnings. Excludes nonrecurring gains: '01, 73¢; '02, 13¢; '04, 14¢. Next earnings report due late July. Quarterly earnings may not sum due to change in share count

(B) Dividends historically paid in early-March, June, September, December ■ Div'd reinvestment plan available

(C) In millions, adjusted for splits

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	70

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 24 of 43

AQUA AMERICA NYSE-WTR

RECENT PRICE 25.90 | P/E RATIO 27.8 (Trailing: 30.1 / Median: 21.0) | RELATIVE P/E RATIO 1.55 | DIV'D YLD 2.0% | VALUE LINE

TIMELINESS 4 Lowered 6/4/04
SAFETY 3 Lowered 8/1/03
TECHNICAL 3 Lowered 3/4/05
BETA .75 (1.00 = Market)

2008-10 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+35%)	9%
Low	25	(+5%)	1%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	1	0	0	0	0	0	0	0	0
Options	0	0	0	0	1	0	0	0	1
to Sell	1	0	1	0	0	0	0	0	2

Institutional Decisions

	2Q2004	3Q2004	4Q2004
to Buy	90	90	103
to Sell	62	45	49
Hld's(000)	26345	20282	27052

LEGENDS
1.50 x Dividends p sh divided by Interest Rate
Relative Price Strength
3-for-2 split 7/96
4-for-3 split 1/99
5-for-4 split 12/00
5-for-4 split 12/01
5-for-4 split 12/03
Options: Yes
Shaded area indicates recession

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	© VALUE LINE PUB., INC.	08-10
	4.53	2.70	2.85	2.43	2.27	2.42	2.45	2.48	2.69	2.79	3.21	3.29	3.59	3.79	3.97	4.63	5.00	5.30	Revenues per sh	6.50
	.65	.58	.59	.52	.56	.56	.63	.67	.74	.81	.96	1.01	1.15	1.26	1.28	1.46	1.55	1.65	"Cash Flow" per sh	1.90
	.27	.33	.33	.31	.33	.35	.39	.40	.46	.53	.56	.62	.68	.72	.76	.85	.95	1.05	Earnings per sh A	1.25
	.24	.26	.26	.27	.27	.28	.29	.30	.32	.34	.36	.38	.40	.43	.46	.49	.52	.56	Div'd Decl'd per sh B■	.68
	1.15	1.01	.72	.80	.63	.61	.69	.64	.77	1.09	1.20	1.55	1.45	1.60	1.76	2.05	1.85	1.80	Cap'l Spending per sh	1.85
	2.92	2.80	2.76	2.79	3.05	3.21	3.28	3.59	3.79	4.28	4.57	5.13	5.53	5.81	7.12	7.85	8.05	8.45	Book Value per sh	9.70
	29.45	30.48	31.06	38.40	44.55	44.83	47.81	49.31	50.60	54.15	60.10	63.87	85.46	84.90	92.59	95.38	98.00	98.00	Common Shs Outst'g C	100.00
	12.9	10.2	10.8	12.5	14.4	13.5	12.0	15.6	17.8	22.5	21.2	18.2	23.6	23.6	24.5	25.1	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	23.0
	.98	.76	.69	.76	.85	.89	.80	.98	1.03	1.17	1.21	1.18	1.21	1.29	1.40	1.34			Relative P/E Ratio	1.55
	6.9%	7.7%	7.2%	6.8%	5.9%	6.0%	6.2%	4.9%	3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%	2.3%			Avg Ann'l Div'd Yield	2.4%
							117.0	122.5	136.2	151.0	257.3	275.5	307.3	322.0	367.2	442.0	490	525	Revenues ($mill)	650
							19.0	19.8	23.2	28.8	45.0	50.7	58.5	62.7	67.3	80.0	95.0	105.0	Net Profit ($mill)	125
							40.4%	41.4%	40.6%	40.6%	38.4%	38.9%	39.3%	38.5%	39.3%	39.4%	40.0%	40.0%	Income Tax Rate	40.0%
							1.6%	--	--	--	--	--	--	--	2.2%	3.2%	3.5%	3.5%	AFUDC % to Net Profit	4.0%
							51.9%	54.1%	54.4%	52.7%	52.9%	52.0%	52.2%	54.2%	51.4%	50.0%	48.0%	48.0%	Long-Term Debt Ratio	40.0%
							46.4%	44.0%	44.8%	46.6%	46.7%	47.8%	47.7%	45.8%	48.6%	50.0%	52.0%	52.0%	Common Equity Ratio	60.0%
							338.0	401.7	427.2	496.6	782.7	901.1	990.4	1076.2	1355.7	1497.3	1525	1550	Total Capital ($mill)	1615
							436.9	502.9	534.5	609.8	1135.4	1251.4	1368.1	1490.8	1824.3	2069.8	2125	2175	Net Plant ($mill)	2325
							7.7%	6.8%	7.4%	7.6%	7.6%	7.4%	7.8%	7.6%	6.4%	6.7%	7.5%	8.0%	Return on Total Cap'l	8.5%
							11.7%	10.7%	11.9%	12.3%	12.2%	11.7%	12.3%	12.7%	10.2%	10.7%	12.0%	12.5%	Return on Shr. Equity	13.0%
							11.7%	11.2%	12.0%	12.4%	12.3%	11.7%	12.4%	12.7%	10.2%	10.7%	12.0%	12.5%	Return on Com Equity	13.0%
							3.5%	2.8%	3.5%	4.5%	4.3%	4.7%	5.1%	5.2%	4.2%	4.6%	5.5%	6.0%	Retained to Com Eq	6.0%
							71%	75%	70%	64%	65%	60%	59%	59%	59%	57%	55%	53%	All Div'ds to Net Prof	55%

% TOT. RETURN 3/05

	THIS STOCK	VL ARITH. INDEX
1 yr.	15.0	7.7
3 yr.	30.4	32.5
5 yr.	136.8	62.6

Target Price Range 2008 | 2009 | 2010

CAPITAL STRUCTURE as of 12/31/04
Total Debt $884.2 mill. Due in 5 Yrs $221.6 mill
LT Debt $748.9 mill. LT Interest $40.0 mill
(Total interest coverage: 3.7x)

Pension Assets-12/04 $115.3 mill.
Oblig $171.1 mill

Pfd Stock None

Common Stock 95,475,161 shares as of 2/18/05

MARKET CAP: $2.5 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2002	2003	12/31/04
Cash Assets	49.7	39.2	13.1
Receivables	57.7	62.3	64.5
Inventory (Avg Cst)	4.6	5.8	6.9
Other	2.7	5.1	5.6
Current Assets	114.7	112.4	90.1
Accts Payable	31.1	32.3	23.5
Debt Due	149.4	135.8	135.3
Other	46.0	63.9	58.6
Current Liab.	226.5	232.0	217.4
Fix. Chg. Cov.	347%	344%	364%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '02-'04 to '08-'10
Revenues	5.5%	7.5%	8.0%
"Cash Flow"	9.5%	9.5%	7.0%
Earnings	9.0%	8.5%	9.0%
Dividends	5.5%	6.5%	7.0%
Book Value	8.5%	10.5%	6.0%

Calendar	QUARTERLY REVENUES ($ mill) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2002	71.7	76.6	91.9	81.8	322.0
2003	80.5	83.4	102.1	101.2	367.2
2004	99.8	106.5	120.3	115.4	442.0
2005	110	120	130	130	490
2006	120	130	140	135	525

Calendar	EARNINGS PER SHARE A D Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2002	.14	.16	.25	.17	.72
2003	.15	.18	.24	.19	.76
2004	.17	.19	.26	.24	.85
2005	.19	.23	.27	.26	.95
2006	.21	.25	.30	.29	1.05

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.099	.099	.099	.106	.40
2002	.106	.106	.106	.112	.43
2003	.112	.112	.112	.12	.46
2004	.12	.12	.12	.13	.49
2005	.13				

BUSINESS: Aqua America, Inc is the holding company for water and wastewater utilities that serve approximately 2.5 million residents in Pennsylvania, Ohio, New Jersey, Illinois, Maine, North Carolina, Texas, Florida, Kentucky, and five other states. Divested three of four non-water businesses in '91; telemarketing group in '93; and others. Acquired Consumers Water, 4/99; AquaSource, 7/03; and others. Water supply revenues '04: residential, 60%; commercial, 15%; industrial & other, 25%. Officers and directors own 1.5% of the common stock (4/05 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.

We look for Aqua America to realize an earnings gain of about 12% in the current year, following similar increases in 2004. Continued growth will likely stem from further acquisitions and some rate increases. The company could also benefit from a long hot summer, as reservoirs in the Northeast are at or near capacity thanks to a wet winter, which will enable the utility to meet customer demand from its own facilities.

Management has been fairly successful in securing rate increases. A pending North Carolina case will yield a $3.2 million increase if granted in full. We believe a realistic decision will be reached, based on previous outcomes in that state. Utility commissions are more apt to award increases due to rising capital costs rather than operating expenses. Its ability to lower the ratio of expenses to revenues impresses the commission.

The company is further expanding through acquisitions. WTR completed eight purchases in the first quarter of 2005. We expect a similar rate of expansion throughout the year. Most of these operations are located in Pennsylvania and New Jersey, areas in which the company already has a strong presence. It is likely to file for additional rate hikes, reflecting the cost of hose acquisitions. Also, three of these purchases represent Aqua's first venture into the specialized area of wastewater treatment. It will enable the company to provide internal sludge hauling and collection system maintenance for its own treatment facilities in southeastern Pennsylvania. If this allows tighter cost control, it may be applied to other geographic regions as opportunity allows, perhaps providing a new source of earnings.

This stock's Price/Earnings ratio is somewhat above its 15-year median. Consequently, despite decent earnings growth prospects, this equity's appreciation potential to 2008–2010 is unattractive. But acquisitions of additional small water utilities will likely continue. The company has typically been able to increase returns on those operations, due to its larger size and lower capital costs. Accordingly, our projections might well prove conservative.

Marc Denton — *April 29, 2005*

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	95
Earnings Predictability	100

(A) Primary shares outstanding through '96; diluted thereafter. Excl. nonrec. gains (losses): '90, (38¢); '91, (34¢); '92, (38¢); '99, (11¢); '00, 2¢; '01, 2¢; '02, 5¢; '03, 4¢. Excl. gain from disc. operations: '96, 2¢. Next earnings report due early May. (B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd reinvestment plan available (5% discount). (C) In millions, adjusted for stock splits. (D) May not sum due to rounding.

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M Ahern, AUS Consultants
Schedule (PMA-17), Page 25 of 43

CALIFORNIA WATER NYSE-CWT

RECENT PRICE 33.30 | P/E RATIO 21.5 (Trailing: 22.8 Median: 17.0) | RELATIVE P/E RATIO 1.20 | DIV'D YLD 3.4% | VALUE LINE

TIMELINESS 4 Lowered 2/4/05
SAFETY 2 Lowered 8/11/05
TECHNICAL 2 Raised 4/29/05
BETA .75 (1.00 = Market)

2008-10 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	40	(+20%)	6%
Low	30	(-10%)	2%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	0	0	0	0	0	0	0	0	1
Options	0	0	0	0	0	0	5	0	0
to Sell	0	0	0	0	0	1	5	0	0

Institutional Decisions

	2Q2004	3Q2004	4Q2004
to Buy	40	36	49
to Sell	30	28	20
Hld's(000)	4047	3994	4419

High: 20.5 17.8 21.9 29.6 33.8 32.0 31.4 28.8 26.9 31.4 37.9 37.8
Low: 14.7 14.8 16.3 18.6 20.8 22.6 21.5 22.9 20.5 23.7 26.1 31.2

LEGENDS
1.33 x Dividends p sh divided by Interest Rate
Relative Price Strength
3-for-1 split 1/98
Options: No
Shaded area indicates recession

Target Price Range 2008 2009 2010

% TOT. RETURN 3/05

	THIS STOCK	VL ARITH. INDEX
1 yr	22.5	7.7
3 yr	47.6	32.5
5 yr.	84.9	62.6

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	© VALUE LINE PUB., INC.	08-10
10.33	10.93	11.18	12.29	13.34	12.59	13.17	14.48	15.46	14.76	15.96	16.16	16.26	17.33	16.37	17.18	18.15	18.95	Revenues per sh	21.75
1.89	1.97	1.98	1.92	2.25	2.02	2.07	2.50	2.92	2.60	2.75	2.52	2.20	2.65	2.51	2.84	3.10	3.40	"Cash Flow" per sh	4.10
1.20	1.25	1.21	1.09	1.35	1.22	1.17	1.51	1.83	1.45	1.53	1.31	.94	1.25	1.21	1.46	1.60	1.75	Earnings per sh A	2.15
.84	.87	.90	.93	.96	.99	1.02	1.04	1.06	1.07	1.09	1.10	1.12	1.12	1.12	1.13	1.14	1.15	Div'd Decl'd per sh B ■	1.24
2.40	2.36	3.03	3.09	2.53	2.26	2.17	2.83	2.61	2.74	3.44	2.45	4.09	5.82	4.39	3.73	3.85	3.95	Cap'l Spending per sh	4.15
9.66	10.04	10.35	10.51	10.90	11.56	11.72	12.22	13.00	13.38	13.43	12.90	12.95	13.12	14.44	16.65	16.00	16.90	Book Value per sh C	19.55
11.38	11.38	11.38	11.38	11.38	12.49	12.54	12.62	12.62	12.62	12.94	15.15	15.16	15.16	16.93	16.37	18.75	19.25	Common Shs Outst'g D	23.00
10.5	10.4	11.2	14.1	13.6	14.1	13.7	11.9	12.6	17.8	17.8	19.6	27.1	19.8	22.1	20.1	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	16.0
.80	.77	.72	.86	.80	.92	.92	.75	.73	.93	1.01	1.27	1.39	1.08	1.26	1.06			Relative P/E Ratio	1.05
6.6%	6.7%	6.6%	6.1%	5.2%	5.8%	6.4%	5.8%	4.6%	4.2%	4.0%	4.3%	4.4%	4.5%	4.2%	5.0%			Avg Ann'l Div'd Yield	3.5%
						165.1	182.8	195.3	186.3	206.4	244.8	246.8	263.2	277.1	315.6	340	365	Revenues ($mill)	500
						14.7	19.1	23.3	18.4	19.9	20.0	14.4	19.1	19.4	26.0	30.0	35.0	Net Profit ($mill)	50.0
						40.1%	38.9%	37.4%	36.4%	37.9%	42.3%	39.4%	39.7%	39.9%	39.6%	40.0%	40.0%	Income Tax Rate	40.0%
						--	--	--	--	--	--	--	--	--	--	Nil	Nil	AFUDC % to Net Profit	Nil
						49.2%	47.4%	45.4%	44.2%	46.9%	48.9%	50.3%	55.3%	50.2%	48.6%	49.5%	49.5%	Long-Term Debt Ratio	49.5%
						49.7%	51.4%	53.6%	54.7%	52.0%	50.2%	48.6%	44.0%	49.1%	50.8%	50.0%	50.0%	Common Equity Ratio	50.0%
						296.0	299.9	306.7	308.6	333.8	388.8	402.7	453.1	498.4	565.9	600	650	Total Capital ($mill)	900
						422.2	443.6	460.4	478.3	515.4	582.0	624.3	697.0	759.5	800.3	850	900	Net Plant ($mill)	1050
						6.6%	8.3%	9.4%	7.8%	7.8%	6.6%	5.3%	6.9%	5.6%	6.1%	5.5%	7.0%	Return on Total Cap'l	7.5%
						9.8%	12.1%	13.9%	10.7%	11.2%	10.0%	7.2%	9.4%	7.8%	8.5%	10.0%	10.5%	Return on Shr. Equity	11.0%
						9.9%	12.3%	14.1%	10.8%	11.4%	10.1%	7.2%	9.5%	7.9%	9.0%	10.0%	10.5%	Return on Com Equity	11.0%
						1.2%	3.8%	6.0%	2.8%	3.5%	1.8%	NMF	1.0%	.7%	1.8%	3.0%	4.0%	Retained to Com Eq	5.0%
						88%	69%	58%	74%	70%	82%	119%	90%	91%	80%	71%	63%	All Div'ds to Net Prof	57%

CAPITAL STRUCTURE as of 12/31/04
Total Debt $274.8 mill. Due in 5 Yrs $11.0 mill.
LT Debt $274.8 mill. LT Interest $18.5 mill.

(LT interest earned: 3.8x; total int. cov.: 3.4x)

Pension Assets-12/04 $75.1 mill.
Oblig. $87.8 mill.
Pfd Stock $3.5 mill. Pfd Div'd $.15 mill.
139,000 shares, 4.4% cumulative ($25 par).

Common Stock 18,372,496 shs.
as of 3/4/05
MARKET CAP: $600 million (Small Cap)

CURRENT POSITION ($MILL.)	2002	2003	12/31/04
Cash Assets	1.1	2.9	18.8
Other	41.9	40.6	51.6
Current Assets	43.0	43.5	70.4
Accts Payable	23.7	23.8	19.8
Debt Due	24.8	7.3	--
Other	43.0	32.5	36.4
Current Liab.	91.5	63.6	57.2
Fix. Chg. Cov.	250%	218%	200%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '02-'04 to '08-'10
Revenues	3.0%	2.0%	4.0%
"Cash Flow"	2.0%	-1.5%	7.5%
Earnings	-0.5%	-6.5%	9.5%
Dividends	2.0%	1.0%	1.5%
Book Value	2.5%	1.0%	5.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2002	51.7	69.2	81.4	60.9	263.2
2003	51.3	68.0	88.2	69.6	277.1
2004	60.2	88.9	97.1	69.4	315.6
2005	65.0	90.0	105	80.0	340
2006	75.0	95.0	110	85.0	365

Calendar	EARNINGS PER SHARE A E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2002	.12	.43	.50	.20	1.25
2003	d.05	.30	.53	.41	1.21
2004	.08	.59	.59	.20	1.46
2005	.10	.60	.65	.25	1.60
2006	.15	.63	.67	.30	1.75

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	279	279	279	279	1.12
2002	28	28	28	28	1.12
2003	281	281	281	281	1.12
2004	283	283	283	283	1.13
2005	285				

BUSINESS: California Water Service Group provides regulated and nonregulated water service to over 2 million people (451,000 customers) in 75 communities in California, Washington, and New Mexico. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired National Utility Company (5/04); Rio Grande Corp. (11/00). Revenue breakdown, '04: residential, 70%; business, 18%; public authorities, 5%; industrial, 4%; other, 3%. '04 reported depreciation rate: 2.3%. Has about 637 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson. Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwater.com.

Changes within the California Public Utility Commission (CPUC) paint a brighter picture for California Water Service Group going forward. The company has been forced to deal with regulatory delays from the board for years, as general rate case requests often remained in limbo for up to two years. However, two of the main adversaries to rate increase requests stepped down earlier this year and were replaced with more business-friendly candidates. The landscape has already improved, as CWT received approval to increase rates on an annual basis by $4.1 million effective January, 2005. The company is currently awaiting a decision on its 2004 general rate case for eight districts, totaling $26.5 million.

However, there are some concerns looming. Earlier this year, the Office of Ratepayer Advocates (ORA) took issue with CWT's land sale program. The CPUC branch, responsible for looking out for ratepayers, charged that CWT violated the California Water Utility Infrastructure Improvement Act of 1995, challenging its land sales since 1996. It recommended that the company pay a small fine and that an unspecified portion of the $19.2 million in gains from these sales be allocated for the benefit of the ratepayers. The company denies the charges. The CPUC does not have to take the ORA's advice, but this is the first case of this nature, making timeline and outcome of a resolution difficult to pin down. We expect the claim to slow earnings growth until the matter is concluded, though. As a result, we have lowered our 2005 earnings estimate by a dime, to $1.60 a share.

Growth-minded investors will want to look elsewhere. These untimely shares are likely to underperform the broad market out to late decade. Besides the uncertainty surrounding the motion by the ORA, profits will likely be thwarted by ongoing share and debt issuances, a product of rising infrastructure costs.

However, Cal may interest those looking for some income. The company offers an above-average dividend yield. And the recent dividend hike marks the 38th consecutive year that it has increased its payout. Risk-averse investors should like the stock's 2 (Above Average) Safety rank.

Andre J. Costanza *April 29, 2005*

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; Q2 '02, 8¢. Next earnings report due late July.
(B) Dividends historically paid in mid-Feb., May, Aug., Nov. ■ Div'd reinvestment plan available.
(C) Incl. deferred charges. In '04: $54.3 mill., $2.96/sh.
(D) In millions, adjusted for split.
(E) May not total due to change in shares.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	95
Earnings Predictability	85

MIDDLESEX WATER NDQ–MSEX

RECENT PRICE 17.68 | TRAILING P/E RATIO 24.2 | RELATIVE P/E RATIO 1.27 | DIV'D YLD 3.8% | VALUE LINE 4705

RANKS
PERFORMANCE 3 Average
Technical 3 Average
SAFETY 2 Above Average
BETA .65 (1.00 = Market)

Financial Strength B++
Price Stability 95
Price Growth Persistence 75
Earnings Predictability 70

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
SALES PER SH	4.52	4.72	4.39	5.35	5.39	5.87	5.98	6.12	6.25	
"CASH FLOW" PER SH	.94	1.02	1.02	1.19	.99	1.18	1.20	1.15	1.28	
EARNINGS PER SH	.60	.67	.71	.76	.51	.66	.73	.61	.73	79 A,D/NA
DIV'DS DECL'D PER SH	.55	.57	.58	.60	.61	.62	.63	.65	.66	
CAP'L SPENDING PER SH	.73	1.20	2.68	2.33	1.32	1.25	1.59	1.87	2.63	
BOOK VALUE PER SH	5.85	6.00	6.80	6.95	6.98	7.11	7.39	7.60	8.36	
COMMON SHS OUTST'G (MILL)	8.41	8.54	9.82	10.00	10.11	10.17	10.36	10.48	11.36	
AVG ANN'L P/E RATIO	14.4	13.4	15.2	17.6	28.7	24.6	23.5	30.0	26.4	22.4/NA
RELATIVE P/E RATIO	.90	.77	.79	1.00	1.87	1.26	1.28	1.71	1.39	
AVG ANN'L DIV'D YIELD	6.4%	6.3%	5.4%	4.4%	4.2%	3.8%	3.7%	3.5%	3.4%	
SALES ($MILL)	38.0	40.3	43.1	53.5	54.5	59.6	61.9	64.1	71.0	
OPERATING MARGIN	36.0%	37.2%	37.0%	33.9%	32.2%	47.2%	47.1%	44.0%	44.4%	
DEPRECIATION ($MILL)	2.9	3.1	3.8	4.3	4.9	5.3	5.0	5.6	6.4	
NET PROFIT ($MILL)	5.2	5.9	6.5	7.9	5.3	7.0	7.8	6.6	8.4	
INCOME TAX RATE	32.8%	34.9%	31.5%	28.8%	33.1%	34.8%	33.3%	32.8%	31.1%	
NET PROFIT MARGIN	13.6%	14.5%	15.1%	14.7%	9.7%	11.7%	12.5%	10.3%	11.9%	
WORKING CAP'L ($MILL)	2.0	d2.9	14.6	6.8	d2.7	d.9	d9.3	d13.3	d11.8	
LONG-TERM DEBT ($MILL)	53.0	52.9	78.0	82.3	81.1	88.1	87.5	97.4	115.3	
SHR. EQUITY ($MILL)	51.9	56.2	71.7	74.6	74.7	76.4	80.6	83.7	99.2	
RETURN ON TOTAL CAP'L	6.4%	6.8%	5.7%	6.4%	4.9%	5.6%	6.0%	5.0%	5.1%	
RETURN ON SHR. EQUITY	10.0%	10.4%	9.1%	10.6%	7.1%	9.1%	9.6%	7.9%	8.5%	
RETAINED TO COM EQ	.8%	1.7%	1.8%	2.5%	NMF	5%	1.3%	NMF	9%	
ALL DIV'DS TO NET PROF	92%	85%	81%	76%	121%	94%	87%	106%	90%	

Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.

A No. of analysts changing earn. est. in last 16 days: 0 up, 0 down, consensus 5-year earnings growth 6.0% per year. D Based upon one analyst's estimate.

ANNUAL RATES

of change (per share)	5 Yrs	1 Yr.
Sales	5.0%	2.0%
"Cash Flow"	2.5%	12.0%
Earnings	-0.5%	19.5%
Dividends	2.5%	2.0%
Book Value	3.5%	10.0%

QUARTERLY SALES ($mill.)

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/02	14.3	15.5	17.0	15.1	61.9
12/31/03	15.0	16.0	17.6	15.5	64.1
12/31/04	15.9	17.8	19.8	17.5	71.0
12/31/05					

EARNINGS PER SHARE

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/01	.08	.18	.23	.17	.66
12/31/02	.12	.18	.24	.19	.73
12/31/03	.11	.17	.22	.11	.61
12/31/04	.09	.16	.29	.19	.73
12/31/05	*.12*	*.24*	*.28*		

QUARTERLY DIVIDENDS PAID

Calendar	1Q	2Q	3Q	4Q	Full Year
2002	.158	.158	.158	.161	.64
2003	.161	.161	.161	.165	.65
2004	.165	.165	.165	.168	.66
2005	.168				

INSTITUTIONAL DECISIONS

	2Q'04	3Q'04	4Q'04
to Buy	19	12	16
to Sell	13	17	12
Hld's(000)	1911	1882	1861

ASSETS ($mill.)	2002	2003	12/31/04
Cash Assets	2.9	3.0	4.0
Receivables	9.2	5.7	9.9
Inventory (Avg cost)	1.2	1.4	1.2
Other	7.0	4.3	.9
Current Assets	20.3	14.4	16.0
Property, Plant & Equip. at cost	259.3	278.4	306.4
Accum Depreciation	47.9	47.5	52.0
Net Property	211.4	230.9	258.4
Other	12.9	17.9	26.7
Total Assets	244.8	263.2	299.1
LIABILITIES ($mill.)			
Accts Payable	2.1	4.8	6.0
Debt Due	18.3	13.6	12.1
Other	9.2	9.3	9.7
Current Liab	29.6	27.7	27.8

LONG-TERM DEBT AND EQUITY as of 12/31/04

Total Debt $127.4 mill. Due in 5 Yrs $19.4 mill.
LT Debt $115.3 mill.
Including Cap. Leases None
(54% of Cap'l)

Leases, Uncapitalized Annual rentals None

Pension Liability $5.5 mill. in '04 vs. $5.1 mill. in '03

Pfd Stock $4.1 mill. Pfd Div'd Paid $.3 mill.
(2% of Cap'l)

Common Stock 11,358,772 shares
(44% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: Middlesex Water Company, through its subsidiaries, engages in the ownership and operation of regulated water utility systems in central and southern New Jersey, and in Delaware, as well as a regulated wastewater utility in southern New Jersey. Its New Jersey water utility system (the Middlesex System) provides water services to retail customers in central New Jersey. The Middlesex System also provides water service under contract to municipalities in central New Jersey. The company operates the water supply system and wastewater system for the city of Perth Amboy in New Jersey in partnership with its subsidiary, Utility Service Affiliates (Perth Amboy), Inc. Its other New Jersey subsidiaries provide water and wastewater services to residents in Southampton Township. The company's Delaware subsidiaries, comprising Tidewater Utilities, Inc. and Southern Shores Water Company, LLC, offer water services to retail customers in New Castle, Kent, and Sussex Counties. Has 220 employees. Chairman: J. Richard Tompkins. Inc.: NJ. Address: 1500 Ronson Road, Iselin, NJ 08830. Tel.: (732) 634-1500. Internet: http://www.middlesexwater.com. *A.O.*

April 29, 2005

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 3/31/2005

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-3.31%	3.09%	-9.13%	15.07%	48.21%

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 27 of 43

YORK WATER CO NDQ–YORW

RECENT PRICE 22.01 | TRAILING P/E RATIO 30.2 | RELATIVE P/E RATIO 1.58 | DIV'D YLD 2.8% | VALUE LINE 4708

RANKS

PERFORMANCE 2 Above Average
Technical 2 Above Average
SAFETY 3 Average
BETA .55 (1.00 = Market)

Financial Strength B+
Price Stability 70
Price Growth Persistence NMF
Earnings Predictability NMF

LEGENDS
12 Mos Mov Avg
Rel Price Strength
2-for-1 split 5/02
Shaded area indicates recession

15.33 8.50 | 20.17 12.30 | 20.23 14.00 | 21.04 16.50 | 22.84 17.50 High Low

18 13 8 5 4 3 2 175 VOL (thous.)

© VALUE LINE PUBLISHING, INC.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
REVENUES PER SH	--	--	--	--	6.07	3.08	3.07	3.25	3.27	
"CASH FLOW" PER SH	--	--	--	--	1.79	.88	.86	.97	.98	
EARNINGS PER SH	--	--	--	--	1.24	.65	.60	.70	.73	.80[A,B]/.87[C]
DIV'D DECL'D PER SH	--	--	--	--	.98	.51	.53	.55	.59	
CAP'L SPENDING PER SH	--	--	--	--	2.11	1.12	.99	1.61	3.76	
BOOK VALUE PER SH	--	--	--	--	10.66	5.69	5.85	6.08	6.98	
COMMON SHS OUTST'G (MILL.)	--	--	--	--	3.04	6.31	6.36	6.42	6.89	
AVG ANN'L P/E RATIO	--	--	--	--	--	17.9	26.9	24.5	25.7	27.5/25.3
RELATIVE P/E RATIO	--	--	--	--	--	.92	1.47	1.40	1.35	
AVG ANN'L DIV'D YIELD	--	--	--	--	--	4.3%	3.3%	3.2%	3.1%	
REVENUES ($MILL)	--	--	--	--	18.5	19.4	19.5	20.9	22.5	
NET PROFIT ($MILL)	--	--	--	--	3.8	4.0	3.8	4.4	4.8	
INCOME TAX RATE	--	--	--	--	35.7%	35.6%	34.9%	34.8%	36.7%	
AFUDC % TO NET PROFIT	--	--	--	--	--	2.2%	3.7%	--	--	
LONG-TERM DEBT RATIO	--	--	--	--	50.2%	47.7%	46.7%	43.4%	42.6%	
COMMON EQUITY RATIO	--	--	--	--	49.8%	52.3%	53.3%	56.6%	57.5%	
TOTAL CAPITAL ($MILL)	--	--	--	--	65.2	68.6	69.9	69.0	83.6	
NET PLANT ($MILL)	--	--	--	--	97.0	102.3	106.7	116.5	140.0	
RETURN ON TOTAL CAP'L	--	--	--	--	7.9%	7.9%	7.4%	8.5%	7.6%	
RETURN ON SHR. EQUITY	--	--	--	--	11.6%	11.2%	10.2%	11.4%	10.0%	
RETURN ON COM EQUITY	--	--	--	--	11.6%	11.2%	10.2%	11.4%	10.0%	
RETAINED TO COM EQ	--	--	--	--	2.5%	2.5%	1.3%	2.6%	2.1%	
ALL DIV'DS TO NET PROF	--	--	--	--	78%	78%	88%	77%	79%	

Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.

[A] No. of analysts changing earn. est. in last 16 days: 0 up, 0 down, consensus 5-year earnings growth 7.3% per year. [B] Based upon 2 analysts' estimates. [C] Based upon one analyst's estimate.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Revenues	--	0.6%
"Cash Flow"	--	1.0%
Earnings	--	4.5%
Dividends	--	7.5%
Book Value	--	14.5%

Fiscal Year	QUARTERLY SALES ($mill.) 1Q	2Q	3Q	4Q	Full Year
12/31/02	4.7	4.9	5.3	4.7	19.6
12/31/03	4.8	5.0	5.8	5.3	20.9
12/31/04	5.3	5.5	5.6	6.1	22.5
12/31/05					

Fiscal Year	EARNINGS PER SHARE 1Q	2Q	3Q	4Q	Full Year
12/31/01	.13	.14	.23	.15	.65
12/31/02	.14	.15	.18	.13	.60
12/31/03	.12	.16	.24	.18	.70
12/31/04	.18	.16	.18	.21	.73
12/31/05	.19	.20	.21		

Cal-endar	QUARTERLY DIVIDENDS PAID 1Q	2Q	3Q	4Q	Full Year
2002	.13	.13	.13	.13	.52
2003	.135	.135	.135	.135	.54
2004	.145	.145	.145	.145	.58
2005	.156				

INSTITUTIONAL DECISIONS

	2Q'04	3Q'04	4Q'04
to Buy	1	5	4
to Sell	6	4	2
Hld's(000)	541	430	443

ASSETS ($mill.)	2002	2003	12/31/04
Cash Assets	.0	.0	.2
Receivables	2.8	3.2	3.7
Inventory	.5	.6	.7
Other	.4	.3	.4
Current Assets	3.7	4.1	5.0
Property, Plant & Equip. at cost	127.7	139.1	164.3
Accum Depreciation	21.0	22.6	24.3
Net Property	106.7	116.5	140.0
Other	6.0	6.9	11.1
Total Assets	118.4	127.5	156.1
LIABILITIES ($mill.)			
Accts Payable	.7	1.7	1.8
Debt Due	2.8	9.9	16.3
Other	2.0	2.4	3.1
Current Liab	5.5	14.0	21.2

LONG-TERM DEBT AND EQUITY as of 12/31/04

Total Debt $51.9 mill. Due in 5 Yrs $19.2 mill.
LT Debt $35.6 mill.
Including Cap. Leases $7.0 mill. (43% of Cap'l)
Leases, Uncapitalized Annual rentals None

Pension Liability $3.0 mill. in '04 vs. None in '03

Pfd Stock None Pfd Div'd Paid None

Common Stock 6,687,047 shares (57% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: York Water Company engages in the impounding, purification, and distribution of water in York County, Pennsylvania. The company has two reservoirs; Lake Williams and Lake Redman, which together hold up to 2.75 billion gallons of water. It supplies water for domestic, commercial, industrial, and fire protection purposes. The company serves approximately 149,000 people in 31 municipalities in York County, Pennsylvania. It supplies through the company's own distribution system to the city of York; the boroughs of New York State. In March, York Water Company entered into an agreement to acquire the water system of Spring Grove Borough that serves customers in York County. In the same month, the company also agreed to acquire the water system of Mountain View Water Company that serves customers and a 220-unit mobile home park in Conewago Township, York County. Has 95 employees. Chairman: William Morris. Inc.: PA. Address: 130 East Market Street, York, PA 17405. Tel.: (717) 845-3601. Internet: http://www.yorkwater.com

A O

April 29, 2005

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 3/31/2005

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-1.03%	11.61%	-3.46%	35.86%	125.57%

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 28 of 43

United Water Idaho, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies
1	Prospective Yield on Aaa Rated Corporate Bonds (1)	6.1 %	6.1 %
2	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.4 (2)	0.4 (2)
3	Adjusted Prospective Yield on A Rated Public Utility Bonds	6.5 %	6.5 %
4	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.0 (3)	0.0 (3)
5	Adjusted Prospective Bond Yield	6.5	6.5
6	Equity Risk Premium (4)	4.3	4.4
7	Risk Premium Derived Common Equity Cost Rate	10.8 %	10.9 %

Notes:
(1) Derived in Note (3) on page 33 of this Schedule, i.e., page 6 of Schedule (PMA-9) (Updated).
(2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.43%, rounded to 0.4% from page 31 of this Schedule, i.e., page 4 of Schedule (PMA-9) (Updated).
(3) No adjustment necessary as the average Moody's bond rating of the proxy group is A2.
(4) From page 32 of this Schedule, i.e., page 5 of Schedule (PMA-9) (Updated).

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 1 of 9
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Exhibit No. 18
Case No. UWI-W-04-04
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Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 2 of 9
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 30 of 43

United Water Idaho, Inc.
Comparison of Bond Ratings and Business Profile for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

	April 2005 Moody's Bond Rating		April 2005 Standard & Poor's Bond Rating				Standard & Poor's Business Position / Profile (2)
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	Credit Rating	Numerical Weighting (1)	
Proxy Group of Six C. A. Turner Water Companies							
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
Artesian Resources, Inc.	NR	--	NR	--	NR	--	--
California Water Service Group (5)	A2	6	NR	--	A+	5	3.0
Middlesex Water Company	NR	--	A+	5	A	6	3.0
York Water Company	NR	--	NR	--	A-	7	2.0
Average	A2	6.0	A+	5.3	A	6.0	2.6
Proxy Group of Three Value Line *(Standard Edition) Water*							
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
California Water Service Group (5)	A2	6	NR	--	A+	5	3.0
Average	A2	6.0	A+ / A	5.5	A	5.7	2.7

Notes:
(1) From page 3 of Schedule (PMA-9).
(2) From Standard & Poor's U.S. Utilities and Power Ranking List, April 22, 2005.
(3) Ratings and business profile are those of Southern California Water Company
(4) Formerly Philadelphia Suburban Corp. Ratings and business profile are those of Aqua Pennsylvania, Inc. (formerly Pennsylvania Suburban Water Company).
(5) Ratings and business profile is that of California Water Service Company.

Source of Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Moody's
Comparison of Interest Rate Trends
for the Three Months Ending February 2005 (1)

Years	Corporate Bonds Aaa Rated	Public Utility Bonds Aa Rated	Public Utility Bonds A Rated	Public Utility Bonds Baa Rated	Spread - Corporate v. Public Utility Bonds Aa (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds A (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds Baa (Pub. Util.) over Aaa (Corp.)	Spread - Public Utility Bonds A over Aa	Spread - Public Utility Bonds Baa over A
December-04	5.47 %	5.78 %	5.92 %	6.10 %					
January-05	5.36	5.68	5.78	5.95					
February-05	5.20	5.55	5.61	5.76					
Average of Last 3 Months	5.34 %	5.67 %	5.77 %	5.94 %	0.33 %	0.43 %	0.60 %	0.10 %	0.17 %
Average Spread (2)					0.33 %	0.43 %	0.60 %	0.10 %	0.17 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record , March 2005, Vol. 72, No. 2

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
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Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 31 of 43

United Water Idaho, Inc.
Judgment of Equity Risk Premium for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	4.3 %	4.6
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	4.2	4.2
3.	Average equity risk premium	4.3 %	4.4 %

Notes: (1) From page 33 of this Schedule, i.e., page 6 of Schedule (PMA-9) (Updated).
(2) From page 35of this Schedule, i.e., page 8 of Schedule (PMA-9) (Updated)

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 5 of 9
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 32 of 43

United Water Idaho, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies
1.	Arithmetic mean total return rate on the Standard & Poor's 500 Composite Index - 1926-2004 (1)	12.4 %	12.4 %
2.	Arithmetic mean total return rate on Aaa and Aa Corporate Bonds 1926-2004 (2)	(6.1)	(6.1)
3	Historical Equity Risk Premium	6.3 %	6.3 %
4.	Forecasted 3-5 year Total Annual Market Return (3)	12.3 %	12.3 %
5.	Prospective Yield an Aaa Rated Corporate Bonds (4)	(6.1)	(6.1)
6	Forecasted Equity Risk Premium	6.2 %	6.2 %
7	Average of Historical and Forecasted Equity Risk Premium (5)	6.3 %	6.3 %
8	Adjusted Value Line Beta (6)	0.68	0.73
9.	Beta Adjusted Equity Risk Premium	4.3 %	4.6 %

Notes:
(1) From Stocks, Bonds, Bills and Inflation - 2005 Yearbook Valuation Edition, Ibbotson Associates, Inc., Chicago, IL. 2005.
(2) From Moody's Industrial Manual and Mergent Bond Record Monthly Update.
(3) From Note 1, page 39 of this Schedule. i.e., 3 of Schedule (PMA-10) (Updated).
(4) Average forecast based upon six quarterly estimates of Aaa rated corporate bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated May 1, 2005 (see page 34 of this Schedule. i.e., page 7 of Schedule (PMA-9) (Updated)) The estimates are detailed below.

Second Quarter 2005	5.5 %
Third Quarter 2005	5.8
Fourth Quarter 2005	6.1
First Quarter 2006	6.2
Second Quarter 2006	6.4
Third Quarter 2006	6.4
Average	6.1 %

(5) Average of the Historical Equity Risk Premium of 6.3% from Line No. 3 and the Forecasted Equity Risk Premium of 6.2% from Line No. 6 ((6.3% + 6.2%) / 2 = 6.25%, rounded to 6.3%).
(5) From page 36 of this Schedle, i.e., page 9 of Schedule (PMA-9) (Updated)

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 6 of 9
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
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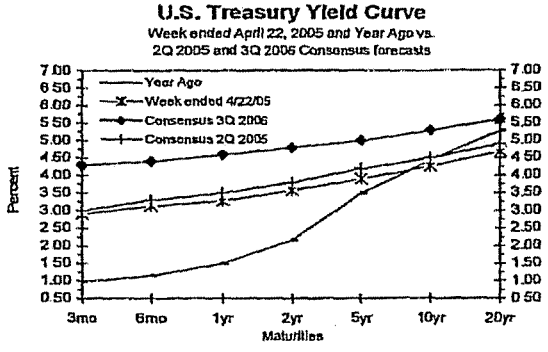
Schedule (PMA-17), Page 33 of 43

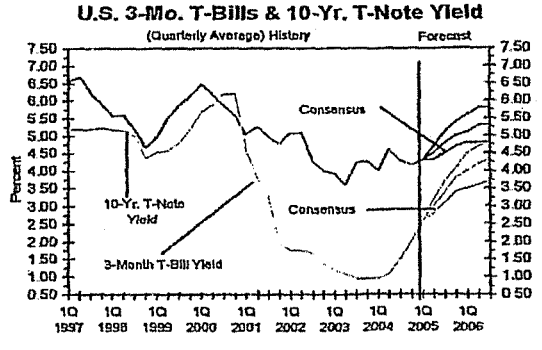
Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

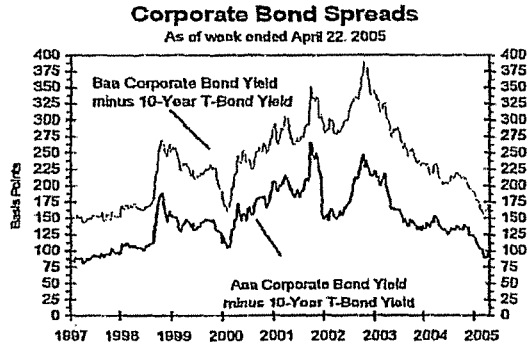
	History							Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			Latest Q	2Q	3Q	4Q	1Q	2Q	3Q
Interest Rates	Apr.22	Apr.15	Apr.8	Apr.1	Mar.	Feb.	Jan.	1Q 2005	2005	2005	2005	2006	2006	2006
Federal Funds Rate	2.78	2.76	2.81	2.77	2.63	2.50	2.28	2.47	3.0	3.4	3.8	4.0	4.2	4.3
Prime Rate	5.75	5.75	5.75	5.75	5.58	5.49	5.25	5.44	6.0	6.4	6.8	7.0	7.2	7.3
LIBOR, 3-mo.	3.16	3.14	3.12	3.10	3.02	2.82	2.67	2.84	3.2	3.7	4.0	4.2	4.4	4.5
Commercial Paper, 1-mo.	2.89	2.81	2.74	2.74	2.67	2.49	2.33	2.50	3.0	3.5	3.8	4.1	4.3	4.3
Treasury bill, 3-mo	2.90	2.77	2.78	2.82	2.80	2.58	2.37	2.58	3.0	3.4	3.8	4.0	4.2	4.3
Treasury bill, 6-mo.	3.13	3.15	3.13	3.15	3.09	2.85	2.68	2.87	3.3	3.7	4.0	4.2	4.3	4.4
Treasury bill, 1 yr	3.28	3.32	3.33	3.38	3.30	3.03	2.86	3.06	3.5	3.9	4.2	4.4	4.5	4.6
Treasury note, 2 yr.	3.57	3.65	3.74	3.84	3.73	3.38	3.22	3.44	3.8	4.2	4.4	4.6	4.7	4.8
Treasury note, 5 yr.	3.90	4.02	4.13	4.24	4.17	3.77	3.71	3.88	4.2	4.5	4.7	4.9	5.0	5.0
Treasury note, 10 yr	4.26	4.37	4.48	4.55	4.50	4.17	4.22	4.30	4.5	4.8	5.0	5.1	5.3	5.3
Treasury note, 20 yr	4.68	4.79	4.87	4.93	4.89	4.61	4.77	4.76	4.9	5.2	5.4	5.5	5.6	5.6
Corporate Aaa bond	5.27	5.36	5.43	5.44	5.40	5.20	5.36	5.32	5.5	5.8	6.1	6.2	6.4	6.4
Corporate Baa bond	6.01	6.08	6.13	6.17	6.06	5.82	6.02	5.97	6.2	6.5	6.8	7.0	7.1	7.2
State & Local bonds	4.42	4.49	4.56	4.61	4.57	4.35	4.41	4.44	4.6	4.8	5.0	5.1	5.2	5.3
Home mortgage rate	5.80	5.91	5.93	6.04	5.93	5.63	5.71	5.76	6.0	6.3	6.5	6.6	6.7	6.8

	History								Consensus Forecasts-Quarterly Avg.					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q*	2Q	3Q	4Q	1Q	2Q	3Q
Key Assumptions	2003	2003	2003	2004	2004	2004	2004	2005	2005	2005	2005	2006	2006	2006
Major Currency Index	90.8	90.7	87.8	85.3	88.0	86.5	81.9	81.3	80.7	80.2	79.7	79.6	79.7	79.9
Real GDP	4.1	7.4	4.2	4.5	3.3	4.0	3.8	3.1	3.4	3.5	3.5	3.4	3.4	3.4
GDP Price Index	1.1	1.4	1.6	2.8	3.2	1.4	2.3	3.3	2.5	2.1	2.1	2.3	2.2	2.2
Consumer Price Index	0.4	2.2	0.9	4.0	4.4	1.7	3.4	2.5	3.3	2.5	2.5	2.5	2.6	2.5

[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).







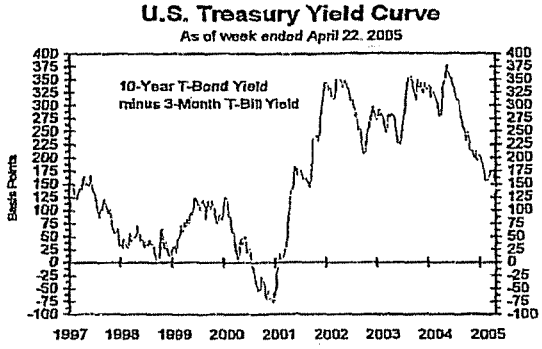


Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 34 of 43

United Water Idaho, Inc.
Derivation of Mean Equity Risk Premium Based on a Study
Using Holding Period Returns of Public Utilities

Line No.		Over A Rated Public Utility Bonds AUS Consultants - Utility Services Study (1)
		1
Time Period		1928-2003
1	Arithmetic Mean Holding Period Returns (2): Standard & Poor's Public Utility Index	10.8 %
2	Arithmetic Mean Yield on: A Rated Public Utility Bonds	(6.6)
3.	Equity Risk Premium	4.2 %

Notes: (1) S&P Public Utility Index and Moody's Pubilc Utility Bond Average Annual Yields 1928-2003, (US Consultants - Utility Services, 2004)

(2) Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 8 of 9
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 35 of 43

United Water Idaho, Inc.
Value Line Adjusted Betas for
the Proxy Group of Six C A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

	Value Line Adjusted Beta
Proxy Group of Six C A Turner Water Companies	
American States Water Co.	0.70
Aqua America, Inc	0.75
Artesian Resources Corp.	NA
California Water Service Group	0.75
Middlesex Water Company	0.65
York Water Company	0.55
Average	0.68
Proxy Group of Three Value Line (Standard Edition) Water	
American States Water Co	0.70
Aqua America, Inc.	0.75
California Water Service Group	0.75
Average	0.73

NA = Not Available

Source of Information: Value Line Investment Survey,
April 29, 2005

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-9), Page 9 of 9
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 36 of 43

United Water Idaho, Inc.
of the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies
		Traditional Capital Asset Pricing Model	
1	Risk-Free Rate (1)	5.4 %	5.4 %
2	Average Company-Specific Market Premium (2)	4.8	5.2
3	Capital Asset Pricing Model Derived Company Equity Cost Rate	10.2 %	10.6 %
		Empirical Capital Asset Pricing Model	
4	Risk-Free Rate (1)	5.4 %	5.4 %
5	Average Company-Specific Market Premium (2)	5.4	5.7
6	Capital Asset Pricing Model Derived Company Equity Cost Rate	10.8 %	11.1 %
7	Conclusion	10.5 %	10.9 %

Notes: (1) Developed in note 2 of page 39 of this Schedule, i.e., page 3 of Schedule (PMA-10) (Updated)
(2) Developed on page 38 of this Schedule, i.e., page 2 of Schedule (PMA-10) (Updated).

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-10), Page 1 of 3
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 37 of 43

United Water Idaho, Inc.
Indicated Common Equity Cost Rate Through Use
of the Capital Asset Pricing Model

	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 7.1% (1)	CAPM Result Including Risk-Free Rate of 5.4% (2)
Traditional Capital Asset Pricing Model (3)			
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	0.70	5.0 %	10.4 %
Aqua America, Inc	0.75	5.3	10.7
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.75	5.3	10.7
Middlesex Water Company	0.65	4.6	10.0
York Water Company	0.55	3.9	9.3
Average	0.68	4.8 %	10.2 % (3)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	0.70	5.0 %	10.4 %
Aqua America, Inc	0.75	5.3	10.7
California Water Service Group	0.75	5.3	10.7
Average	0.73	5.2 %	10.6 % (3)
Empirical Capital Asset Pricing Model (5)			
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	0.70	5.5 %	10.9 %
Aqua America, Inc	0.75	5.8	11.2
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.75	5.8	11.2
Middlesex Water Company	0.65	5.2	10.6
York Water Company	0.55	4.7	10.1
Average	0.68	5.4 %	10.8 % (3)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	0.70	5.5 %	10.9 %
Aqua America, Inc.	0.75	5.8	11.2
California Water Service Group	0.75	5.8	11.2
	0.73	5.7 %	11.1 % (3)

See page 39 for notes.

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-10), Page 2 of 3
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 38 of 43

United Water Idaho, Inc.
Development of the Market-Required Rate of Return on Common Equity Using
the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies
Adjusted to Reflect a Forecasted Risk-Free Rate and Market Return

Notes:

(1) From the three previous month-end (Feb. '05 – Apr. '05), as well as a recently available (Apr. 29, 2005), Value Line Summary & Index, a forecasted 3-5 year total annual market return of 12.3% can be derived by averaging the 3-month and spot forecasted total 3-5 year total appreciation, converting it into an annual market appreciation and adding the Value Line average forecasted annual dividend yield.

The 3-5 year average total market appreciation of 50% produces a four-year average annual return of 10.67% ($(1.50^{.25}) - 1$). When the average annual forecasted dividend yield of 1.67% is added, a total average market return of 12.34%, rounded to 12.3%, (1.67% + 10.67%) is derived.

The 3-month and spot forecasted total market return of 12.3% minus the risk-free rate of 5.4% (developed in Note 2) is 6.9% (12.3% - 5.4%). The Ibbotson Associates calculated market premium of 7.2% for the period 1926-2004 results from a total market return of 12.4% less the average income return on long-term U.S. Government Securities of 5.2% (12.4% - 5.2% = 7.2%). This is then averaged with the 6.9% Value Line market premium resulting in a 7.05%, rounded to 7.1% market premium. The 7.12% market premium is then multiplied by the beta in column 1 of page 38 of this Schedule , i.e., Schedule (PMA-10), page 3 (Updated)

(2) Average forecast based upon six quarterly estimates of 20-year Treasury Bond yields per the consensus of nearly 50 economists reported in the Blue Chip Financial Forecasts dated October 1, 2004 (see page 34 of this Schedule, i.e , page 7 of Schedule (PMA-9) (Updated)) The estimates are detailed below:

	20-Year Treasury Bond Yield
Second Quarter 2005	4.9%
Third Quarter 2005	5.2
Fourth Quarter 2005	5.4
First Quarter 2006	5.5
Second Quarter 2006	5.6
Third First Quarter 2006	5.6
Average	5.4%

(3) The traditional Capital Asset Pricing Model (CAPM) is applied using the following formula:

$R_S = R_F + \beta (R_M - R_F)$

Where R_S = Return rate of common stock
R_F = Risk Free Rate
β = Value Line Adjusted Beta
R_M = Return on the market as a whole

(4) Includes only those indicated common equity cost rates which are above 6.5%, i.e., 200 basis points above the prospective yield of 6.5% on A rated Moody's public utility bonds (from page 29 of this Schedule, i.e , page 1 of Schedule (PMA-9) (Updated))

(5) The empirical CAPM is applied using the following formula:

$R_S = R_F + .25 (R_M - R_F) + .75 \beta (R_M - R_F)$

Where R_S = Return rate of common stock
R_F = Risk-Free Rate
β = Value Line Adjusted Beta
R_M = Return on the market as a whole

Source of Information:
Value Line Summary & Index
Blue Chip Financial Forecasts, May 1, 2005
Value Line Investment Survey, April 29, 2005, Standard Edition and Small and Mid-Cap Edition
Stocks, Bonds, Bills and Inflation – Valuation Edition 2005 Yearbook, Ibbotson Associates, Inc., Chicago, IL

Exhibit No. 12
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-10), Page 3 of 3
(Updated)

Exhibit No. 18
Case No. UWI-W-04-04
Pauline M. Ahern, AUS Consultants
Schedule (PMA-17), Page 39 of 43

United Water Idaho, Inc.
Comparable Earnings Analysis
for a Proxy Group of Seventy-Nine Non-Utility Companies Comparable to
the Proxy Group of Six C. A. Turner Water Companies (1)

Proxy Group of Seventy-Nine Non-Utility Companies Comparable to the Proxy Group of Six C. A. Turner Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
21st Century Ins. Group	0.65	0.73	4.1045	0.1063	12.1 %	1.8 %	3.7 %	7.4 %	8.5 %	8.7 %	(0.90)	10.0 %	(0.94)
ABM Industries Inc.	0.70	0.51	3.8382	0.0994	14.0	13.7	12.5	12.1	8.2	12.1	(0.54)	14.0	(0.33)
Abbott Labs.	0.80	0.64	4.0020	0.1036	34.7	32.5	32.5	30.4	26.6	31.3	0.75	27.5	1.71
AmerisourceBergen	0.75	0.59	4.1861	0.1363	60.0	35.1	4.9	10.8	11.2	22.4	0.15	10.0	(0.84)
Annaly Mortgage Mgmt.	0.65	0.46	3.5641	0.0923	17.6	12.2	13.8	20.3	15.7	15.9	(0.28)	14.0	(0.33)
Applied Ind'l Techn.	0.75	0.56	3.9803	0.1025	6.6	10.4	9.0	4.9	5.9	7.4	(0.65)	14.0	(0.33)
Archer Daniels Midl'd	0.70	0.54	3.7599	0.0973	4.5	4.9	6.1	6.8	6.2	5.7	(0.87)	10.0	(0.84)
Arrow Int'l	0.60	0.33	3.9025	0.1010	15.8	17.0	14.3	13.1	13.3	14.7	(0.36)	15.0	(0.18)
Ball Corp.	0.65	0.73	3.8152	0.1014	15.1	16.6	21.0	32.3	29.4	22.9	0.19	20.5	0.65
Bard (C.R.)	0.75	0.59	3.7710	0.0976	20.5	20.4	18.2	20.1	19.5	19.7	(0.03)	23.0	1.03
Barnes Group	0.75	0.60	3.8747	0.1003	15.8	17.7	9.6	13.0	10.3	13.3	(0.46)	13.5	(0.41)
Beckman Coulter	0.60	0.38	4.0464	0.1047	46.5	36.5	27.3	28.9	20.3	31.5	0.77	13.5	(0.41)
Becton Dickinson	0.75	0.61	3.9551	0.1024	21.8	20.1	18.8	19.3	19.6	19.9	(0.01)	20.0	0.58
Berry Petroleum 'A'	0.70	0.48	3.8777	0.1030	15.5	25.6	14.3	17.5	17.5	18.1	(0.13)	16.5	0.05
Blyth Inc.	0.75	0.59	4.0458	0.1047	24.3	23.0	16.5	16.9	17.0	19.5	(0.04)	14.0	(0.33)
Bob Evans Farms	0.85	0.72	3.9148	0.1013	12.3	11.1	12.5	13.4	11.4	12.1	(0.54)	11.0	(0.79)
CLARCOR Inc.	0.65	0.71	3.7264	0.0965	16.6	16.6	15.3	14.8	14.7	15.6	(0.30)	13.0	(0.40)
ChoicePoint Inc.	0.65	0.75	4.0305	0.1043	18.1	18.1	16.3	18.1	16.1	17.3	(0.19)	14.0	(0.33)
Coca-Cola	0.65	0.41	3.8732	0.1003	34.0	38.4	35.0	34.7	34.0	35.4	1.03	33.5 (4)	2.62
Coca-Cola Bottling	0.50	0.19	3.9384	0.1019	14.7	-9.5	38.5	69.0	58.5	38.0	1.20	41.0 (4)	3.76
ConAgra Foods	0.70	0.52	3.5237	0.0912	23.9	27.0	17.1	18.2	18.2	20.9	0.05	16.0	0.27
Constellation Brands	0.65	0.45	4.2245	0.1094	15.5	15.8	14.4	16.4	11.2	14.7	(0.36)	12.5	(0.56)
Corn Products Int'l	0.75	0.62	3.7603	0.0981	7.5	6.4	6.7	7.6	8.3	7.3	(0.88)	11.0	(0.79)
Curtiss-Wright	0.70	0.48	3.5457	0.0918	12.3	13.1	11.6	10.1	10.9	11.6	(0.57)	11.0	(0.78)
Dean Foods	0.65	0.40	3.4581	0.0895	20.5	20.1	8.5	17.0	12.6	15.7	(0.30)	10.5	(0.86)
Dentsply Int'l	0.70	0.54	3.3077	0.0856	19.2	19.4	16.0	17.5	15.4	17.9	(0.15)	12.5	(0.56)
Dionex Corp.	0.80	0.66	4.1881	0.1084	34.7	28.7	24.5	21.0	19.7	25.7	0.38	23.0	1.03
ESCO Technologies	0.75	0.60	4.2075	0.1089	3.5	5.4	6.1	7.1	12.0	6.8	(0.89)	12.5	(0.58)
Fortune Brands	0.65	0.72	3.6381	0.0942	12.4	17.1	17.8	21.2	20.9	17.9	(0.15)	17.5	0.20
Franklin Electric	0.65	0.41	3.8328	0.0992	27.8	20.9	22.0	21.0	17.9	21.8	0.12	16.0	(0.03)
Gen'l Dynamics	0.75	0.62	3.9923	0.1033	22.5	23.6	20.8	20.2	16.7	20.8	0.05	17.0	0.12
Gillette	0.65	0.47	3.9984	0.1035	41.2	65.0	48.9	53.5	61.8	54.1 (4)	2.28	31.5 (4)	2.32
Golden West Fin'l	0.85	0.75	3.5852	0.0931	13.0	14.8	14.8	18.1	16.9	18.8	(0.10)	20.5	0.65
HON Industries Inc.	0.65	0.74	3.6729	0.0951	19.6	18.5	15.2	14.1	13.8	16.3	(0.26)	17.5	0.20
Harland (John H.)	0.70	0.50	4.0667	0.1053	25.3	16.7	19.3	22.4	22.0	21.1	0.07	15.5	(0.11)
Hillenbrand Inds.	0.80	0.67	3.4433	0.0891	17.7	18.7	17.7	19.8	21.1	19.0	(0.07)	16.0	(0.03)
Int'l Flavors & Frag.	0.75	0.58	3.7525	0.0971	22.0	23.7	25.8	32.0	28.9	26.1	0.40	18.5	0.35
Invacare Corp.	0.60	0.67	3.8611	0.1000	15.8	15.1	15.8	13.5	11.6	14.4	(0.38)	12.0	(0.64)
Kellogg	0.55	0.31	3.6308	0.0940	74.5	72.6	61.1	79.4	54.5	68.4 (4)	3.24	27.5	1.71
Kimball Int'l 'B'	0.80	0.63	4.2659	0.1104	12.0	10.3	8.2	5.8	1.3	7.5	(0.85)	10.0	(0.94)
Lancaster Colony	0.75	0.59	3.7450	0.0969	22.9	24.6	18.6	16.6	16.1	20.0	(0.01)	14.5	(0.26)
Lance Inc.	0.65	0.46	3.9241	0.1016	13.7	12.6	13.4	11.0	13.1	12.8	(0.49)	15.8	(0.11)
Lawson Products	0.65	0.42	3.6513	0.0945	15.9	16.3	6.7	7.7	9.7	11.7	(0.56)	15.0	(0.18)
Libbey Inc.	0.75	0.59	4.2544	0.1101	47.3	35.2	23.8	26.1	20.6	30.6	0.70	17.0	0.12
Lincoln Elec Hldgs.	0.80	0.66	4.0224	0.1041	20.7	19.3	16.8	17.2	11.7	17.1	(0.20)	13.5	(0.41)
Lockheed Martin	0.60	0.34	4.2031	0.1088	9.0	6.0	10.8	18.0	15.6	11.9	(0.55)	21.0	0.73
Murphy Oil Corp.	0.85	0.74	3.9871	0.1032	9.4	24.3	17.6	6.4	13.1	14.2	(0.40)	9.5	(1.02)
New Plan Excel R'lty	0.65	0.46	3.3159	0.0858	9.2	7.9	7.0	7.8	6.1	8.0	(0.81)	12.5	(0.58)
Northrop Grumman	0.60	0.38	3.8461	0.0998	14.8	15.9	5.5	4.8	4.8	9.2	(0.73)	11.0	(0.78)
Occidental Petroleum	0.85	0.73	3.4225	0.0886	7.3	27.8	23.6	16.2	20.3	19.0	(0.07)	15.5	(0.11)
PepsiAmericas Inc.	0.75	0.58	3.7762	0.0978	6.2	5.8	6.3	8.4	9.8	7.5	(0.85)	10.5	(0.86)
Pfizer Inc.	0.65	0.71	3.3984	0.0880	38.2	40.4	45.6	47.9	19.5	38.3	1.22	21.0	0.73
Procter & Gamble	0.60	0.36	4.2173	0.1092	34.4	34.4	36.6	38.9	35.4	35.5	1.03	29.5 (4)	2.02
Quaker Chemical	0.60	0.63	3.8901	0.1007	19.0	20.2	16.6	18.2	13.2	17.1	(0.20)	9.5	(1.02)
Ralcorp Holdings	0.55	0.29	3.4046	0.0881	11.2	10.8	9.9	12.3	13.0	11.4	(0.58)	12.0	(0.64)
Ruddick Corp.	0.85	0.70	3.7843	0.0980	11.4	10.6	10.6	12.3	12.1	11.5	(0.58)	13.0	(0.48)
Ryan's Family	0.75	0.58	4.2258	0.1094	14.7	14.9	14.2	15.7	14.0	14.7	(0.36)	11.0	(0.79)
SLM Corporation	0.80	0.68	3.5721	0.0925	47.9	34.8	37.3	31.9	33.3	37.0	1.13	26.5	1.56
Sara Lee Corp.	0.60	0.36	3.4174	0.0885	88.3	82.0	99.9	63.8	58.1	80.8 (4)	4.06	32.5 (4)	2.47
Schulman (A.)	0.80	0.68	4.2284	0.1095	13.4	11.7	3.9	9.0	4.2	8.4	(0.79)	8.0	(1.24)

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Exhibit No. 18
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United Water Idaho Inc.
Comparable Earnings Analysis
for a Proxy Group of Seventy-Nine Non-Utility Companies Comparable to
the Proxy Group of Six C. A. Turner Water Companies (1)

Proxy Group of Seventy-Nine Non-Utility Companies Comparable to the Proxy Group of Six C. A. Turner Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
Selective Ins. Group	0.60	0.64	3.8719	0.0951	9.4	4.8	4.5	6.1	7.7	6.5	(0.91)	12.5	(0.59)
Sanifort Techn.	0.70	0.54	3.6751	0.0951	16.6	16.7	15.1	16.2	13.4	16.0	(0.20)	12.0	(0.64)
ServiceMaster Co.	0.75	0.55	4.0512	0.1049	16.6	15.9	9.4	14.0	19.4	15.5	(0.31)	10.5	0.60
Sigma-Aldrich	0.60	0.68	4.0344	0.1044	11.8	16.2	17.4	14.8	16.3	15.9	(0.28)	14.5	(0.20)
Smucker (J.M.)	0.85	0.41	3.7441	0.0969	11.4	13.4	12.2	8.3	10.0	11.3	(0.59)	10.0	(0.94)
Standex Int'l	0.60	0.43	3.8787	0.1004	18.9	18.5	14.5	11.4	11.1	14.9	(0.35)	16.5	0.05
Stryker Corp.	0.75	0.58	4.0975	0.1061	23.9	25.9	25.7	23.8	21.0	24.1	0.27	20.5	1.58
Sysco Corp.	0.60	0.65	3.5151	0.0910	25.4	26.8	27.8	31.8	35.4	29.3	0.62	20.5	1.88
Tecumseh Products 'A'	0.60	0.62	3.9032	0.1017	13.1	6.6	4.4	5.5	3.8	6.7	(0.89)	10.8	(0.89)
Ternaid Co.	0.75	0.60	3.6385	0.0942	17.7	16.2	3.1	8.0	8.5	11.1	(0.60)	12.0	(0.84)
Thomas Indrs.	0.75	0.56	3.6754	0.0960	12.5	13.5	11.9	10.4	9.7	11.6	(0.57)	7.0	(1.39)
Thomburg Mtg.	0.70	0.54	3.5956	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.58)	11.5	(0.71)
Union Pacific	0.60	0.76	3.2465	0.0841	8.2	9.0	6.7	8.3	8.5	8.7	(0.77)	8.0	(1.09)
Universal Corp.	0.70	0.48	3.7068	0.0960	23.6	23.7	21.4	18.1	18.3	21.0	0.08	17.0	0.12
WD-40 Co.	0.70	0.51	4.2230	0.1093	39.3	38.8	30.0	30.5	27.9	33.4	0.88	20.5	0.65
Walgreen Co.	0.85	0.72	3.7260	0.0965	17.9	17.0	16.7	16.3	16.1	17.0	(0.21)	17.5	0.20
Wendy's Int'l	0.75	0.54	3.9893	0.1032	15.6	16.1	16.8	15.1	13.4	15.6	(0.26)	14.5	(0.28)
West Pharmac. Svcs.	0.70	0.48	3.6954	0.0933	15.7	8.3	11.8	6.4	10.6	10.6	(0.64)	12.5	(0.56)
Zimmer Holdings	0.75	0.59	3.8939	0.1288	42.7	73.6	242.4	70.4	8.3	87.7 (4)	4.54	14.5	(0.28)
Average for the Non-Utility Group	0.74	0.58	3.8319	0.0989									
Average for the Proxy Group of Six C. A. Turner Water Companies	0.65	0.45	3.7805 (5)	0.1014									
Mean										17.3%		15.1%	
Conclusion (6)											10.2% (6)		
Conservative Mean (7)										14.8%		13.5%	
Conservative Conclusion (6)											14.2% (6)		

See pages 5 and 6 for notes.

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United Water Idaho, Inc.
Comparable Earnings Analysis
for a Proxy Group of Ninety-Seven Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (E)

Proxy Group of Ninety-Seven Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (5)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-Year Average (2) Percent	5-Year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
McGraw-Hill	0.80	0.65	3.1551	0.0917	23.7	26.2	25.9	26.6	24.6	25.4	0.36	25.0	1.41
Medtronic Inc.	0.90	0.76	3.9851	0.1028	24.7	23.4	23.0	21.6	22.0	23.0	0.20	20.0	0.62
Merck & Co.	0.85	0.77	3.7757	0.0977	44.5	48.0	45.4	39.5	42.3	43.6	1.55	23.0	1.10
Mercury General	0.90	0.80	3.3098	0.0857	14.7	10.6	9.8	10.2	14.1	11.9	(0.53)	18.0	(0.02)
Minerals Techn.	0.90	0.79	3.6265	0.0939	12.6	12.6	10.2	9.1	7.3	10.4	(0.83)	9.0	(1.13)
Murphy Oil Corp.	0.85	0.74	3.9871	0.1032	9.4	24.3	17.6	6.4	13.1	14.2	(0.38)	9.5	(1.05)
New Plan Excel Rlty	0.65	0.46	3.3158	0.0859	9.2	7.9	7.0	7.9	8.1	8.0	(0.79)	12.5	(0.57)
Northrop Grumman	0.80	0.38	3.8461	0.0996	14.9	15.9	5.5	4.8	4.8	9.2	(0.71)	11.0	(0.81)
Occidental Petroleum	0.85	0.73	3.4225	0.0886	7.3	27.8	23.6	16.2	20.3	19.0	(0.07)	15.5	(0.19)
Pactiv Corp.	0.95	0.77	4.0803	0.1061	7.1	9.3	9.8	24.5	21.7	14.5	(0.39)	15.5	(0.10)
People's Bank	0.85	0.72	3.2209	0.0834	14.3	12.3	2.6	5.9	6.4	8.3	(0.77)	11.5	(0.73)
PepsiAmericas Inc.	0.75	0.58	3.7762	0.0978	9.2	5.8	6.3	9.4	9.8	7.5	(0.82)	10.5	(0.89)
PepsiCo Inc.	0.65	0.44	3.1931	0.0827	28.6	30.1	34.6	37.7	30.0	31.8	0.78	32.0 (4)	2.52
Pfizer Inc.	0.85	0.71	3.3984	0.0880	39.2	40.4	45.6	47.9	19.5	38.3	1.20	21.0	0.78
Protective Life	0.90	0.79	3.7503	0.0971	17.7	12.3	10.1	10.0	9.8	12.0	(0.53)	11.5	(0.73)
Quaker Chemical	0.80	0.63	3.8901	0.1007	19.0	20.2	16.8	18.2	15.2	17.1	(0.18)	9.5	(1.05)
Ralcorp Holdings	0.55	0.28	3.4048	0.0881	11.2	10.8	9.8	12.3	13.0	11.4	(0.57)	12.0	(0.65)
Ruddick Corp.	0.85	0.70	3.7843	0.0980	11.4	10.9	10.6	12.3	12.1	11.5	(0.56)	13.0	(0.49)
SUM Corporation	0.80	0.68	3.5721	0.0925	47.9	34.8	37.3	31.8	33.3	37.0	1.12	28.5	1.85
Sara Lee Corp.	0.60	0.38	3.4174	0.0885	88.3	92.0	89.9	63.8	59.1	80.8 (4)	3.89	32.5 (4)	2.60
Selective Ins. Group	0.80	0.64	3.6719	0.0951	9.4	4.8	4.5	6.1	7.7	6.5	(0.89)	12.5	(0.57)
Semtech Techn.	0.70	0.54	3.6751	0.0951	16.6	16.7	15.1	16.2	13.4	16.0	(0.26)	12.0	(0.65)
ServiceMaster Co.	0.75	0.55	4.0512	0.1049	16.6	15.9	9.4	14.0	19.4	15.5	(0.30)	19.5	0.64
Sigma-Aldrich	0.80	0.69	4.0344	0.1044	11.8	16.2	17.4	14.8	18.3	15.9	(0.27)	14.5	(0.25)
Smucker (J.M.)	0.65	0.41	3.7441	0.0969	11.4	13.4	12.2	9.3	10.0	11.5	(0.57)	10.0	(0.97)
Standex Int'l	0.80	0.63	3.8767	0.1004	19.9	18.5	14.5	11.4	11.1	14.9	(0.34)	16.5	0.06
Stryker Corp.	0.75	0.58	4.0875	0.1061	23.9	28.9	28.7	23.8	21.0	24.1	0.27	26.5	1.85
Sysco Corp.	0.80	0.65	3.5151	0.0910	25.4	25.8	27.8	31.8	35.4	29.3	0.81	28.5	1.97
Tecumseh Products 'A'	0.60	0.62	3.9302	0.1017	13.1	6.6	4.4	5.5	3.9	6.7	(0.88)	10.5	(0.89)
Tennant Co.	0.75	0.60	3.6385	0.0942	17.7	18.2	3.1	8.0	8.5	11.1	(0.59)	12.0	(0.65)
Thomas Indus.	0.75	0.58	3.8254	0.0990	12.5	13.5	11.9	10.4	9.7	11.6	(0.55)	7.0	(1.44)
Thomburg Mtg.	0.70	0.54	3.5968	0.0931	9.2	8.2	11.9	14.4	14.2	11.4	(0.57)	11.5	(0.73)
Toro Co.	0.60	0.60	3.2788	0.0849	12.5	14.3	14.8	17.4	18.5	15.5	(0.30)	27.0	1.73
Union Pacific	0.90	0.76	3.2485	0.0841	9.2	9.0	8.7	9.3	8.5	8.7	(0.74)	9.0	(1.13)
Universal Corp.	0.70	0.49	3.7086	0.0960	23.6	23.7	21.4	16.1	18.3	21.0	0.07	17.0	0.14
Unocal Corp.	0.80	0.76	3.4344	0.0889	5.2	26.6	19.2	10.0	10.0	15.4	(0.30)	18.0	(0.02)
Valspar Corp.	0.90	0.81	3.6618	0.0948	20.8	19.8	7.9	16.3	12.9	15.6	(0.29)	12.5	(0.57)
Vulcan Corp.	0.85	0.72	3.7280	0.0965	17.9	17.9	16.7	16.3	16.1	17.0	(0.20)	17.5	0.22
Walgreen Co.	0.70	0.52	3.2491	0.0841	6.5	7.8	10.1	10.4	9.5	9.3	(0.70)	10.5	(0.89)
Wals Markets	0.75	0.54	3.8983	0.1032	15.6	16.1	19.9	15.1	13.4	15.6	(0.26)	14.5	(0.25)
Wendy's Int'l	0.70	0.48	3.8054	0.0933	15.7	9.3	11.9	6.4	10.6	10.6	(0.62)	12.5	(0.57)
West Pharmac. Svcs.	0.75	0.59	3.8939	0.1268	42.7	73.6	242.4	70.4	9.3	87.7 (4)	4.45	14.5 (4)	(0.25)
Zimmer Holdings													
Average for the Non-Utility Group	0.77	0.62	3.7016	0.0961									
Average for the Proxy Group of Three Value Line (Standard Edition) Water Companies	0.72	0.54	3.6320	(10 0.0940									
Mean										16.7%		14.8%	
Conclusion (9)											15.8% (9)		
Conservative Mean (7)										14.3%		13.5%	
Conservative Conclusion (9)											13.9% (9)		

See pages 5 and 6 for notes.

AQUA WATER EXHIBIT NO. 3.0

AQUA ILLINOIS, INC. – WOODHAVEN LAKES WATER DIVISION

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS - UTILITY SERVICES

CONCERNING

COMMON EQUITY COST RATE

DECEMBER 2004

TABLE OF CONTENTS

Appendix A to the Direct Testimony of Pauline M. Ahern

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. Please summarize your educational background and professional experience.

A. I am a graduate of Clark University, Worcester, MA, where I received a Bachelor of Arts degree with honors in Economics in 1973. In 1991, I received a Master of Business Administration with high honors from Rutgers University.

In June 1988, I joined AUS Consultants - Utility Services as a Financial Analyst and am now a Vice President. I am responsible for the preparation of all fair rate of return and capital structure exhibits for AUS Consultants - Utility Services. I have offered expert testimony on behalf of investor-owned utilities before twenty state regulatory commissions. The details of these appearances, as well as details of my educational background, are shown in Appendix A supplementing this testimony.

I am also the Publisher of C. A. Turner Utility Reports, responsible for the production, publication, distribution and marketing of these reports. C. A. Turner Utility Reports provides financial data and related ratios covering approximately 150 public utility companies on a monthly, quarterly, and annual basis. Coverage includes electric, combination gas and electric, gas distribution, gas transmission, telephone, water and international utilities. The Reports are distributed to about 100 subscribers, which include utilities, state utility commissions, federal agencies, individuals, brokerage firms, attorneys and public

and collegiate libraries.

I also calculate and maintain the A.G.A. Index under contract with the American Gas Association (A.G.A.). The A.G.A. Index is a market capitalization weighted index of the common stocks of about 70 corporate members of the A.G.A.

I have co-authored an article with Frank J. Hanley, President, AUS Consultants - Utility Services entitled "Comparable Earnings: New Life for an Old Precept" which was published in the American Gas Association's Financial Quarterly Review, Summer 1994. I also assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

I am a member of the Society of Utility and Regulatory Financial Analysts, formerly the National Society of Rate of Return Analysts serving as Secretary/Treasurer for 2004-2006. In 1992, I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts. This designation is based upon education, experience and the successful completion of a comprehensive written examination.

I am an associate member of the National Association of Water Companies, serving on its Finance Committee, and a member of the Energy Association of Pennsylvania, formerly the Pennsylvania Gas Association.

Q. What is the purpose of your testimony?

A. The purpose is to provide testimony on behalf of Aqua IL - Woodhaven Lakes Water Division (Aqua IL - Woodhaven or the Company) as to the appropriate common equity cost rate which it should be afforded the opportunity to earn on

the common equity financed portion of its jurisdictional rate base.

Q. What is your recommended common equity cost rate?

A. Although the Company is basing its filing upon a requested common equity cost rate of 10.75%, current capital market conditions indicate that a common equity cost rate of 11.30% is applicable to a 51.39% average common equity ratio estimated for the test year ending December 31, 2005. The capital structure and the embedded cost rates of long- and short-term debt as well as preferred stock are supported by Company Witness Jack Schreyer.

Q. Have you prepared an exhibit which supports your overall recommended fair rate of return?

A. Yes, I have. It has been marked for identification as Aqua Water Exhibit No. 3.0 and consists of Aqua Schedules 3.1 through 3.16. Hereinafter, references to Schedules within this testimony will be from this Exhibit, unless otherwise noted.

II. SUMMARY

Q. Please summarize your recommended common equity cost rate.

A. The basis of the 11.30% common equity cost rate recommendation is summarized on Aqua Schedule 3.1, page 2 and results in an overall cost of capital of 9.283% when applied to Aqua IL - Woodhaven's average capital structure and related ratios and fixed capital cost rates estimated at December 31, 2005 which is summarized on Aqua Schedule 3.1, page 1.

The overall cost of capital is summarized in Table 1 below:

Table 1

	Capital Structure Ratios	Cost Rate	Weighted Return
Long-Term Debt	47.90%	7.19%	3.446%
Short-Term Debt	0.38	3.07	0.012
Total Debt	48.28		3.458
Preferred Stock	0.32	5.48	0.018
Common Equity	51.39	11.30	5.807
Total	99.99%(1)		9.283%

(1) Does not add due to rounding.

Because Aqua IL - Woodhaven's common stock is not publicly traded, market-based common equity cost rates cannot be determined directly for Aqua IL - Woodhaven. Therefore, in arriving at my recommended common equity cost rate of 11.30%, I assessed the market-based cost rates of companies of relatively similar risk, i.e., proxy group(s), for insight into a recommended common equity cost rate applicable to Aqua IL - Woodhaven and suitable for cost of capital purposes. It is appropriate to look to a proxy group or groups of companies as similar in risk as possible whose common stocks are actively traded for insight into an appropriate common equity cost rate applicable to Aqua IL - Woodhaven and then adjust the results upward to reflect Aqua IL - Woodhaven's greater investment risk (vis-à-vis the proxy group(s)). Using other utilities of relatively comparable risk as proxies is consistent with the principles of fair rate of return established in the Hope[1] and Bluefield[2] cases and adds reliability to the informed expert judgment used in arriving at a recommended

[1] Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).

[2] Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679 (1922).

common equity cost rate. However, no proxy group can be selected to be identical in risk to Aqua IL - Woodhaven and therefore, the proxy group(s)' results must be adjusted to reflect the greater relative investment risk of Aqua IL - Woodhaven as will be subsequently discussed in detail. Therefore, I have evaluated the market data of two proxy groups of water companies and a group of utility companies in arriving at my recommended common equity cost rate. The bases of selection are described below.

As explained in more detail below, my analysis reflects current capital market conditions and results from the application of four well-tested market-based cost of common equity models, the Discounted Cash Flow (DCF) approach, the Risk Premium Model (RPM), the Capital Asset Pricing Model (CAPM), and the Comparable Earnings Model (CEM).

The results derived from each are as follows:

Table 2

	Proxy Group of Six C.A. Turner Water Cos.	Proxy Group of Three Value Line (Std. Ed.) Water Cos.	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Discounted Cash Flow Model	10.6%	11.0%	10.8%
Risk Premium Model	10.6	10.8	10.9
Capital Asset Pricing Model	10.0	10.3	10.3
Comparable Earnings Model	14.2	14.0	13.8
Indicated Common Equity Cost Rate Before Investment Risk Adjustment	10.80%	11.00%	11.00%
Investment Risk Adjustment	0.30	0.30	0.50
Common Equity Cost Rate After Adjustment for Investment Risk	11.10%	11.10%	11.50%
Recommended Common Equity Cost Rate		11.30%	

After reviewing the cost rates based upon the four models, I conclude that a common equity cost rate before an investment risk adjustment of 10.80% is indicated based upon the application of all four models to the proxy group of six

C.A. Turner water companies, 11.00% for the proxy group of three Value Line (Standard Edition) water companies, and 11.00% for the proxy group of fifteen utilities selected on the basis of least relative distance. After applying investment risk adjustments due to Aqua IL - Woodhaven's small size and greater credit risk[3] vis-a-vis the two proxy groups as will be discussed in detail subsequently, the indicated common equity cost rate for each proxy group is 11.10%, 11.30%, and 11.50%, respectively. Based upon these cost rates, I recommend a common equity cost rate of 11.30% applicable to the Company's proposed common equity ratio of 51.39%.

III. GENERAL PRINCIPLES

Q. What general principles have you considered in arriving at your recommended common equity cost rate of 11.30%.

A. In unregulated industries, marketplace competition is the principal determinant of the price of a product or service. In the case of regulated public utilities, regulation must act as a substitute for marketplace competition. Consequently, marketplace data must be relied upon to assure that the utility can fulfill its obligations to the public and provide adequate service at all times. This requires a level of earnings sufficient to maintain the integrity of presently invested capital and permit the attraction of needed new capital at a reasonable cost in competition with other comparable-risk firms. These standards for a fair rate of return have been established by the U.S. Supreme Court in the Hope and Bluefield cases cited previously. Consequently, in my determination of a fair rate of return, I have also evaluated data gathered from the marketplace for utilities as similar in risk as possible to Aqua IL - Woodhaven.

[3] Due to Aqua IL NAIC2 rating, which is equivalent to a Moody's Baa bond rating and to a Standard & Poor's (S&P) bond rating of BBB.

IV. BUSINESS RISK

Q. Please define business risk and explain why it is important to the determination of a fair rate of return?

A. Business risk incorporates all of the risks of a firm other than financial risk, which will be discussed subsequently. Examples of business risk include the quality of management and the regulatory environment which have a direct bearing on earnings.

Business risk is important to the determination of a fair rate of return because the greater the level or risk, the greater the rate of return investors demand, consistent with the basic financial precept of risk and return.

Q. Please discuss the business risks facing the water industry in general.

A. The water utility industry faces significant risks related to replacing aging transmission and distribution systems. Value Line Investment Survey[4] observes:

> Infrastructure costs continue to climb higher as water utility companies, with little help from strapped government branches, are forced to deal with maintaining and upgrading existing facilities. Costs are becoming an even greater concern as time passes because a number of the functioning systems currently in place are over 100 years old and in need of significant repair. That said, we believe that it will take hundreds of billions of dollars to renovate existing pipelines over the next few decades. To make matters worse, the costs of staying in compliance with regulatory laws are growing even more difficult, due to fears of terrorist activities against the country's drinking supplies. Although the Safe Drinking Water Act (SDWA) of 1974 remains the authority for the safety and

[4] Value Line Investment Survey, October 29, 2004.

> purity of drinking water, recent amendments are making compliance even more demanding. In 1996, an amendment authorized the Environmental Protection Agency (EPA) to step up local compliance levels. And, governing law-makers now insist that the EPA work with local and state governments to test for impurities in drinking water and to regulate the levels of contaminants that are acceptable.

In addition, because the water industry is much more capital-intensive than the electric, natural gas or telephone industries, the investment required to produce a dollar of revenue is greater. And, because investor-owned water utilities typically do not receive federal funds for infrastructure replacement, the challenge to investor-owned water utilities is exacerbated and their access to financing is restricted, thus increasing risk.

The water utility industry also experiences lower relative depreciation rates. Lower depreciation rates, as one of the principal sources of internal cash flows for all utilities, mean that water utility depreciation as a source of internally-generated cash is far less than for electric, natural gas or telephone utilities. Water utilities' assets have longer lives and, hence, longer capital recovery periods. As such, water utilities face greater risk due to inflation which results in a higher replacement cost per dollar of net plant than for other types of utilities.

In addition, as noted by S&P[5]:

> Environmental regulations, which can be particularly stringent for water utilities, impact credit quality. Mandatory compliance with environmental legislation is often quite capital intensive. This is particularly so in the areas of wastewater discharge and drinking water quality. In most jurisdictions observed by Standard & Poor's, pressures from environmental standards is likely to increase. High compliance costs can impact a water utility's creditworthiness if their financing is up-front and their recovery is over a long period, potentially putting stress on the financial profile in the short term.
>
> A key rating consideration is the extent of the link between a water

[5] Standard & Poor's, Criteria: Infrastructure Finance, Water and Wastewater Utilities, Projects and Concessions, September 1998, p. 47.

utility's legislated environmental standards and its rate-setting mechanism. Stringent environmental rules requiring expensive upgrade and compliance costs are not necessarily a negative rating factor, so long as the utility has a flexible and transparent process for passing the costs through to consumers, and these consumers are willing and able to bear these costs. Standard & Poor's considers whether the environmental and economic regulators are acting in isolation, or perhaps have different constituencies.

Moody's[6] also notes that:

> We expect that the credit quality of the investor-owned U.S. water utilities will likely deteriorate over the next several years, due to ongoing large capital spending requirements in the industry. Larger capital expenditures facing the water utility industry result from the following factors:
>
> - Continued federal and state environmental compliance requirements;
> - Higher capital investments for constructing modern water treatment and filtration facilities;
> - Ongoing improvement of maturing distribution and delivery infrastructure; and
> - Heightened security measures for emergency preparedness designed to prevent potential terrorist acts.
>
> Given the overwhelming importance of protecting the public health, the water utility industry remains regulated by the federal and state regulatory agencies. As a result of this importance, the level of state regulators' responsiveness is critical in enabling the water utilities to maintain their financial integrity. In addition, when utilities are permitted a fair rate of return and timely rate adjustments to reflect the costs of providing this essential service, they will be more able to implement the necessary safeguards to protect the public health.

In addition, the water utility industry, as well as the electric and natural gas utility industries, faces the need for increased funds to finance the increasing security costs required to protect the water supply and infrastructure from potential terrorist attacks in the post-September 11, 2001 world.

[6] Moody's Investors Service, Global Credit Research, "Credit Risks and Increasing for U.S. Investor Owned Water Utilities", Special Comment, January 2004, p. 5.

In view of the foregoing, it is clear that their high degree of capital intensity coupled with the need for substantial infrastructure capital spending and increased anti-terrorism security spending, require regulatory support in the form of adequate and timely rate relief so water utilities will be able to successfully meet the challenges they face.

Q. Does Aqua IL - Woodhaven face additional extraordinary business risk?

A. Yes. Aqua IL - Woodhaven's smaller size, i.e., total capital of $112.954 million at December 31, 2003 (see page 3 of Aqua Schedule 3.1) vis-à-vis average total capital of $502.690 million in 2003 for the proxy group of six C.A. Turner water companies (see page 3 of Aqua Schedule 3.1), $865.130 million for the proxy group of three Value Line (Std. Ed.) water companies, and $6.719 billion for the proxy group of fifteen utilities selected on the basis of least relative distance (see page 3 of Aqua Schedule 3.1) indicates greater relative business risk because all else equal, size has a bearing on risk.

Q. Please explain why size has a bearing on business risk.

A. Smaller companies are less capable of coping with significant events which affect sales, revenues and earnings.

The loss of revenues from a few larger customers, for example, would have a greater effect on a small company than on a much larger company with a larger customer base. Because Aqua IL - Woodhaven is the regulated utility to whose rate base the Illinois Commerce Commission's (ICC or the Commission)

ultimately allowed overall cost of capital and fair rate of return will be applied, the relevant risk reflected in the cost of capital must be that of Aqua IL - Woodhaven, including the impact of its small size on common equity cost rate. Size is an important factor which affects common equity cost rate, and Aqua IL - Woodhaven is significantly smaller than the average company in the proxy group based upon total investor-provided capital as shown below:

Table 3

	2003 Total Capital ($ millions)	Times Greater than The Company	Market Capitalization(1) ($ Millions)	Times Greater than the Company
Proxy Group of Six C.A. Turner Water Companies	$502.690	4.5x	$605.425	4.4x
Proxy Group of Three Value Line (Std. Ed.) Water Companies	865.130	7.7x	1,054.633	8.0x
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	6,719.260	59.5x	5,517.271	49.9x
Aqua IL - Woodhaven	112.954		136.749 (2) 132.125 (3) 110.465 (4)	

(1) From Aqua Schedule 3.1, page 3.
(2) Based upon the average market-to-book ratio of the proxy group of six C.A. Turner water companies.
(3) Based upon the average market-to-book ratio of the proxy group of three Value Line (Std. Ed.) water companies.
(4) Based upon the average market-to-book ratio of the proxy group of fifteen utilities selected on the basis of least relative distance.

I have also done a study of the market capitalization of the proxy groups of six C.A. Turner water companies, three Value Line (Std. Ed.) water companies, and fifteen utilities. The results are shown on page 5 of Aqua Schedule 3.1 which summarizes the market capitalizations as of December 7, 2004.

Aqua IL - Woodhaven's common stock is not publicly traded. Consequently, I have assumed that if it were publicly traded, its consolidated common shares would be selling at the same market-to-book ratio as the

average market-to-book ratio for the proxy group, or 233.6% (six water companies), 225.7% (three water companies), and 188.7% (fifteen utilities) at December 7, 2004. Hence, Aqua IL - Woodhaven's market capitalization is estimated at $136.749 million, $132.125, and $110.465 based upon the average market-to-book ratios of each proxy group, respectively, as of December 7, 2004. In contrast, the market capitalization of the average C.A. Turner water company was $605.425 million on December 7, 2004, or 4.4 times larger than Aqua IL - Woodhaven's estimated market capitalization. In addition, the market capitalization of the average Value Line (Std. Ed.) water company was $1.055 billion and of the average utility company selected on the basis of least relative distance, $5.517 billion at December 7, 2004, or 8.0 and 49.9 times larger than Aqua IL – Woodhaven, respectively. It is conventional wisdom, supported by actual returns over time, and a general premise contained in basic finance textbooks, that smaller companies tend to be more risky causing investors to expect greater returns as compensation for that risk.

Q. Does the financial literature affirm a relationship between size and common equity cost rate?

A. Yes. Brigham[7] states"

> A number of researchers have observed that portfolios of small-firms have earned consistently higher average returns than those of large-firms stocks; this is called "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; what *the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms.* (italics added)

[7] Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition, The Dryden Press, 1989, p. 623.

V. FINANCIAL RISK

Q. Please define financial risk and explain why it is important to the determination of a fair rate of return?

A. Financial risk is the additional risk created by the introduction of senior capital, i.e., debt and preferred stock, into the capital structure. In other words, the higher the proportion of senior capital in the capital structure, the higher the financial risk.

Utilities formerly were considered to have much less business risk vis-a-vis unregulated enterprises, and, as a result, a larger percentage of debt capital was acceptable to investors. In June 2004, S&P revised its utility financial guidelines and assigned new business profile scores to U.S. utility and power companies to better reflect the relative business risk among companies in the sector. S&P's revised financial guidelines to the bond rating process for utilities can be found in Aqua Schedule 3.2, page 14, while pages 1 through 9 describe the utility bond rating process. As shown on page 14, S&P's revised financial guidelines for utilities establishes financial target ratios for ten levels of business position/profile with "1" being considered lowest risk and "10" being highest risk.

As shown on Aqua Schedule 3.14, page 2, the average S&P bond rating (issue credit rating) and business profile of the six C.A. Turner water companies is A+ and "2.6", which rounds to "3", A+/A and "2.7" (rounded to "3"), for the three Value Line (Std. Ed.) water companies, and A and "3.5" for the fifteen utilities selected on the basis of least relative distance.

Q. How can one measure the combined business and financial risks, i.e., investment risk of an enterprise?

A. Similar bond ratings/issue credit ratings reflect similar combined business and financial risks, i.e., total risk. Although the specific business or financial risks may differ between companies, the same bond rating indicates that the combined risks are similar as the bond rating process reflects acknowledgment of all diversifiable business and financial risks. For example, S&P expressly states that the bond rating process encompasses a qualitative analysis of business and financial risks (see pages 3 through 9 of Aqua Schedule 3.2). There is no perfect single proxy, such as bond rating or common stock ranking, by which one can differentiate common equity risk between companies. However, the bond rating provides a useful means to compare/differentiate common equity risk between companies because it is the result of a thorough and comprehensive analysis of all diversifiable business and financial risks, i.e., investment risk.

Aqua IL - Woodhaven's debt has been assigned the bond / issue credit rating equivalent of an NAIC (National Association of Insurance Commissioners) Rating of 2 by NatCity Investments, Inc., the investment banker which privately places Aqua IL - Woodhaven's debt with insurance companies. According to the NAIC[8]:

> **NAIC 2** is assigned to obligations of high quality. Credit risk is low but may increase in the intermediate future and the issuer's credit profile is reasonably stable. This means that for the present, the obligation's protective elements suggest a high likelihood that interest, principal or both will be paid in accordance with the contractual agreement, but there are suggestions that an adverse change in circumstances or economic, financial or business conditions will affect the degree of protection and lead to a weakened capacity to pay. An NAIC 2

[8] National Association of Insurance Commissioners, Purposes and Procedures Manual of the NAIC Securities Valuation Office, December 31, 2003 Update, Part Three: Definitions of NAIC Designation Categories, Valuation Indicators and Administrative Symbols, p. 1.

obligation should be eligible for relatively favorable treatment under the NAIC Financial Conditions Framework.

The NAIC also compares its ratings to those of "Nationally Recognized Statistical Rating Organizations", such as Moody's and S&P. Thus, according to the NAIC, an NAIC 2 rating is equivalent to Moody's Baa1, Baa2, and Baa3 and S&P's BBB+, BBB, and BBB- bond ratings.[9] Hence, Aqua IL - Woodhaven's credit risk is greater than that of either proxy group whose average Moody's and S&P bond / issue credit ratings are A2 and A+, for the six water companies, A2 and A+/A, for the three water companies, respectively, and A3 and A, for the fifteen utilities, respectively.

VI. AQUA IL – WOODHAVEN LAKES WATER DIVISION

Q. Have you reviewed financial data for Aqua IL - Woodhaven?

A. Yes. Aqua IL - Woodhaven provides water service to approximately 6,200 retail customers in the Woodhaven Lakes Development. Aqua IL - Woodhaven is a subsidiary of Consumers Water Company. Thus, the Company's common stock is not publicly traded.

VII. PROXY GROUPS

Q. Please explain how you chose the proxy group of six C.A. Turner water companies.

A. The basis of selection for the proxy group of six C.A. Turner water companies were those companies that meet the following criteria: 1) they are included in the

[9] Id., Appendix A, Section 4, "List of Nationally Recognized Statistical Rating Organizations and the Rating Equivalent of Their Systems to NAIC Designations", pp. A-13 and A-14.

Water Company Group of C.A. Turner Public Utility Reports (December 2004); 2) they have Value Line or Thomson FN/First Call Consensus; and 3) they have more than 70% of their 2003 operating revenues derived from water operations. Six companies met all of these criteria.

Q. Please describe Aqua Schedule 3.4.

A. Aqua Schedule 3.4 contains comparative capitalization and financial statistics for the six C.A. Turner water companies for the years 1999 through 2003. The schedule consists of three pages. Page 1 contains a summary of the comparative data for the years 1999-2003. Page 2 contains notes relevant to page 1, as well as the basis of selection and names of the individual companies in the proxy group. Page 3 contains the capital structure ratios based upon total capital (including short-term debt) by company and on average for the years 1999-2003.

During the five-year period ending 2003, the achieved average earnings rate on book common equity for this group ranged between 8.97% in 2003, and 10.82% in 1999, and averaged 10.16%. The five-year average market/book ratio ending 2003 was 212.98%. The five-year ending 2003 average common equity ratio based upon total investor-provided capital was 43.09%, while the five-year average dividend payout ratio was 80.17%.

Coverage of interest charges, excluding all AFUDC from funds from operations for the years 1999-2003 ranged between 3.10 and 3.38 times and averaged 3.26 times during the five-year period, while funds from operations relative to total debt ranged from 13.57% in 2003 to 15.57% in 1999 and averaged 14.36% for the five-year period.

Q. Please explain how you chose the proxy group of three Value Line water

companies.

A. The basis of selection for the proxy group of three Value Line (Standard Edison) water companies was to include those companies which are part of Value Line's (Standard Edition) Water Utility Industry Group.

Q. Please describe Aqua Schedule 3.5.

A. Schedule 3.5 contains comparative capitalization and financial statistics for the three Value Line (Standard Edition) water companies for the years 1999 through 2003. The schedule consists of three pages. Page 1 contains a summary of the comparative data for the years 1999-2003. Page 2 contains notes relevant to page 1, as well as the basis of selection and names of the individual companies in the proxy group. Page 3 contains the capital structure ratios based upon total capital (including short-term debt) by company and on average for the years 1999-2003.

During the five-year period ending 2003, the achieved average earnings rate on book common equity for this group ranged between 8.86% in 2003, and 11.28% in 1999, and averaged 10.60%. The five-year average market/book ratio ending 2003 was 219.34%. The five-year ending 2003 average common equity ratio based upon total investor-provided capital was 43.01%, while the five-year average dividend payout ratio was 75.16%.

Coverage of interest charges, excluding all AFUDC from funds from operations for the years 1999-2003 ranged between 3.40 and 3.63 times and averaged 3.54 times during the five-year period, while funds from operations relative to total debt ranged from 14.60% to 18.17% and averaged 15.89% during the five-year period.

Q. Please explain how you chose the proxy group of fifteen utilities selected on the basis of least relative distance.

A. Investment risk is the sum of business and financial risks. I chose to examine eight operating / financial ratios that I believe provide comprehensive insight into the business and financial risks of utilities, including water companies. I based my analyses upon the average results for the years 2001, 2002, and 2003. As the benchmark I utilized, for Aqua IL - Woodhaven, the three-year average for each of eight ratios which are described as follows: 1) pretax interest coverage; 2) common equity ratio; 3) fixed asset turnover; 4) the percentage of allowance for funds used during construction (AFUDC) to net income; 5) cash flow as a percentage of permanent capitalization; 6) the ratio of net cash flow to expenditures; 7) interest coverage based on funds flow; and 8) operating earnings stability.

I employed the Company's ratios as described above in order to select companies comparable in risk to Aqua IL - Woodhaven. I began with all electric, gas, combination electric and gas and water utilities for which data are available for the entire time period in the Standard & Poor's Compustat Services, Inc., PC Plus/Research Insight Database. I calculated the three-year average ratios for 99 electric, gas, combination electric and gas and water utilities and rank-ordered them in terms of the least relative distance to Aqua IL - Woodhaven. The sum of distance was obtained by calculating the squared distances between the eight operating / financial ratios of each firm and those of the Company, summing those squared distances, and then by calculating the square root of the summation. Fifteen utilities were selected as having the lowest sum of distance from Aqua IL - Woodhaven. Consequently, these companies, based upon the eight operating / financial ratios, are the closest in risk to Aqua IL - Woodhaven. Their financial profile is summarized in Aqua Schedule 3.6.

Q. Please describe Aqua Schedule 3.6.

A. Aqua Schedule 3.6 contains comparative capitalization and financial statistics for the fifteen utilities selected on the basis of least relative distance for the years 1999 through 2003. The schedule consists of six pages. Page 1 contains a summary of the comparative data for the years 1999-2003. Page 2 contains notes relevant to page 1, as well as the basis of selection of the individual companies in the proxy group. Pages 3 and 4 contain the capital structure ratios based upon total capital (including short-term debt) by company and on average for the proxy group for the years 1999-2003. Page 5 contains the eight ratios for Aqua IL - Woodhaven and the fifteen utilities which have the lowest sum of distance and thus are closest in risk to Aqua IL - Woodhaven. Page 6 contains notes relevant to page 5.

During the five-year period ending 2003, the achieved average earnings rate on book common equity for this group ranged between 10.02% in 2003 and 11.75% in 1999, and averaged 11.08%. The five-year average market / book ratio ending 2003 was 179.08%. The five-year average ending 2003 common equity ratio based on total investor-provided capital was 42.11%, while the five-year average dividend payout ratio was 71.45%.

Coverage of interest charges, excluding all AFUDC from funds from operations for the years 1999-2003 ranged between 3.69 and 4.29 times and averaged 3.99 times during the five-year period, while funds from operations relative to total debt ranged from 16.03% to 20.85% and averaged 18.65% during the five-year period.

VIII. COMMON EQUITY COST RATE MODELS

A. The Efficient Market Hypothesis (EMH)

Q. Are the cost of common equity models you use market-based models, and hence based upon the EMH?

A. Yes. The DCF model is market-based in that market prices are utilized in developing the dividend yield component of the model. The RPM is market-based in that the bond ratings and expected bond yields used in the application of the RPM reflect the market's assessment of risk. In addition, the use of betas to determine the equity risk premium also reflects the market's assessment of risk as betas are derived from regression analyses of market prices. The CAPM is market-based for many of the same reasons that the RPM is market-based i.e., the use of expected bond (Treasury bond) yields and betas. The CEM is market-based in that the process of selecting the comparable risk non-utility companies is based upon statistics which result from regression analyses of market prices. Therefore, all the cost of common equity models I utilize are market-based models, and hence based upon the EMH.

Q. Please describe the conceptual basis of the EMH.

A. The Efficient Market Hypothesis (EMH), which is the foundation of modern investment theory, was pioneered by Eugene F. Fama[10] in 1970. An efficient market is one in which security prices reflect all relevant information all the time. This implies that prices adjust instantaneously to new information, thus reflecting the intrinsic fundamental economic value of a security.[11]

[10] Fama, Eugene F., "Efficient Capital Markets: A Review of Theory and Empirical Work". Journal of Finance, May 1970, pp. 383-417.

[11] Morin, Roger A., Regulatory Finance - Utilities' Cost of Capital. Public Utility Reports, Inc., Arlington, VA, 1994, p. 136.

The essential components of the EMH are:

A. Investors are rational and invest in assets providing the highest expected return given a particular level of risk.

B. Current market prices reflect all publicly available information.

C. Returns are independent i.e., today's market returns are unrelated to yesterday's returns.

D. Capital markets follow a random walk i.e., the probability distribution of expected returns approximates a normal distribution.

Brealey and Myers state:[12]

> When economists say that the security market is 'efficient', they are not talking about whether the filing is up to date or whether desktops are tidy. They mean that information is widely and cheaply available to investors and that all relevant and ascertainable information is already reflected in security prices.

The three forms of the EMH are:

A. The "weak" form which asserts that all past market prices and data are fully reflected in securities prices i.e., technical analysis cannot enable an investor to "outperform the market".

B. The "semistrong" form which asserts that all publicly available information is fully reflected in securities prices i.e., fundamental analysis cannot enable an investor to "outperform the market".

C. The "strong" form which asserts that all information, both public and private, is fully reflected in securities prices i.e., even insider information cannot enable an investor to "outperform the market".

The "semistrong" form of the EMH is generally held to be true because the use of insider information often enables investors to "outperform the market" and

[12] Brealey, R.A. and Myers, S.C., Principles of Corporate Finance, McGraw-Hill Publications, Inc., 1996, pp. 323-324.

earn excessive returns. The generally-accepted "semistrong" form of the EMH means that all perceived risks are taken into account by investors in the prices the pay for securities. Investors are aware of all publicly-available information, including bond ratings, discussions about companies by bond rating agencies and investment analysts as well as the various cost of common equity methodologies (models) discussed in the financial literature. In an attempt to emulate investor behavior, this means that no single common equity cost rate model should be relied upon in determining a cost rate of common equity and that the results of multiple cost of common equity models should be taken into account.

Q. Is there support in the academic literature for the need to rely upon more than one cost of common equity model in arriving at a recommended common equity cost rate?

A. Yes. For example, Phillips[13] states:

> Since regulation establishes a level of authorized earnings which, in turn, implicitly influences dividends per share, *estimation of the growth rate from such data is an inherently circular process. For these reasons, the DCF model "suggests a degree of precision which is in fact not present" and leaves "wide room for controversy and argument about the level of k".* (italics added) (p. 396)
>
> * * *
>
> Despite the difficulty of measuring relative risk, the comparable earnings standard is no harder to apply than is the market-determined standard. The DCF method, to illustrate, requires a subjective determination of the growth rate the market is contemplating. Moreover, as Leventhal has argued: *'Unless the utility is permitted to earn a return comparable to that available elsewhere on similar risk, it will not be able in the long run to attract capital.'* (italics added) (p.

[13] Charles F. Phillips, Jr., The Regulation of Public Utilities-Theory and Practice, 1993, Public Utility Reports, Inc., Arlington, VA, p. 396, 398.

398)

Also, Morin[14] states:

> Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods. The DCF model is one of many tools to be employed in conjunction with other methods to estimate the cost of equity. *It is not a superior methodology that supplants other financial theory and market evidence. The broad usage of the DCF methodology in regulatory proceedings does not make it superior to other methods.* (italics added) (Morin, pp. 231-232)

> Each methodology requires the exercise of considerable judgment on the reasonableness of the assumptions underlying the methodology and on the reasonableness of the proxies used to validate a theory. *The failure of the traditional infinite growth DCF model to account for changes in relative market valuation, discussed above, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. It follows that more than one methodology should be employed in arriving at a judgment on the cost of equity and that these methodologies should be applied across a series of comparable risk companies. ...Financial literature supports the use of multiple methods.* (italics added) (Morin, p. 239)

> Professor Eugene Brigham, a widely respected scholar and finance academician asserted:
>
> *In practical work, it is often best to use all three methods -CAPM, bond yield plus risk premium, and DCF* - and then apply judgement when the methods produce different results. People experienced in estimating capital costs recognize that both careful analysis and very fine judgements are required. It would be nice to pretend that these judgements are unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible. (italics added) (Morin, pp. 239-240)

> Another prominent finance scholar, Professor Stewart Myers, in his best-selling corporate finance textbook stated:
>
> *The constant growth formula and the capital asset pricing model are two different ways of getting a handle on the same problem.* (italics added) (Morin, p. 240)

[14] Roger A. Morin, Regulatory Finance-Utilities' Cost of Capital, 1994, Public Utilities Reports, Inc., Arlington, VA, pp. 231-232, 239-240.

In an earlier article, Professor Myers explained the point more fully:

> Use more than one model when you can. Because estimating the opportunity cost of capital is difficult, only a fool throws away useful information. That means you should not use any one model or measure mechanically and exclusively. Beta is helpful as one tool in a kit, to be used in parallel with DCF models or other techniques for interpreting capital market data. (Morin, p. 240)

In view of the foregoing, it is clear that investors are aware of all of the models available for use in determining a common equity cost rate. The EMH requires the assumption that, collectively, investors use them all.

B. Discounted Cash Flow Model (DCF)

1. Theoretical Basis

Q. What is the theoretical basis of the DCF model?

A. The theory of the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be determined by discounting the cash flows at the cost of capital, or the capitalization rate. DCF theory suggests that an investor buys a stock for an expected total return rate which is expected to be derived from cash flows received in the form of dividends plus appreciation in market price (the expected growth rate). Thus, the dividend yield on market price plus a growth rate equals the capitalization rate, i.e., the total return rate expected by investors.

Q. Please comment on the applicability of the DCF model in establishing a cost of common equity for Aqua IL – Woodhaven.

A. The extent to which the DCF is relied upon should depend upon the extent to which

the cost rate results differ from those resulting from the use of other cost of common equity models because the DCF model has a tendency to mis-specify investors' required return rate when the market value of common stock differs significantly from its book value. Market values and book values of common stocks are seldom at unity. The market-based DCF model will result in a total annual dollar return on book common equity equal to the total annual dollar return expected by investors only when market and book values are equal, a rare and unlikely situation. In recent years, the market values of utilities' common stocks have been well in excess of their book values as shown on page 1 of Aqua Schedule 3.4 ranging between 191.35% and 221.41% for the proxy group of six C.A. Turner water companies, between 206.93% and 225.26% for the proxy group of three Value Line (Std. Ed.) water companies as shown on page 1 of Aqua Schedule 3.5, and between 170.39% and 187.01% for the proxy group of fifteen utilities selected on the basis of least relative distance as shown on page 1 of Aqua Schedule 3.6.

Mathematically, the DCF model understates/overstates investors' required return rate when market value exceeds/is less than book value because, in many instances, market prices reflect investors' assessments of long-range market price growth potentials (consistent with the infinite investment horizon implicit in the standard regulatory version of the DCF model) not fully reflected in analysts' shorter range forecasts of future growth for earnings per share (EPS) and dividends per share (DPS) accounting proxies. This indicates the need to better match market prices with investors' longer range growth expectations embedded in those prices. However, the understatement/overstatement of investors' required return rate associated with the application of the market price-based DCF model to the book value of common equity clearly illustrates why reliance upon a single common equity cost rate model should be avoided.

2. Applicability of a Market-Based Common Equity Cost Rate to a Book Value Rate Base

Q. Is it reasonable to expect the market values of utilities' common stocks to continue to sell well above their book values?

A. Yes. I believe that the common stocks of utilities will continue to sell substantially above their book values, because many investors, especially individuals who traditionally committed less capital to the equity markets, will likely continue to commit a greater percentage of their available capital to common stocks in view of lower interest rate alternative investment opportunities and to provide for retirement. The recent past and current capital market environment is in stark contrast to the late 1970's and early 1980's when very high (by historical standards) yields on secured debt instruments in public utilities were available.

The significant recent increases in market-to-book ratios have been influenced by factors other than fundamentals such as actual and reported growth in earnings per share (EPS) and dividends per share (DPS). For example, David Wessel in the Wall Street Journal states:[15]

> So if the fundamentals aren't driving stock prices, then what is? It's that hard-to-quantify investor appetite for buying stocks. The market has been strong because lots of people want to hold stocks. It will continue to be strong as long as they continue to be willing to pay more for stocks than they used to.
>
> * * *
>
> Psychoanalyzing investors is a favorite pastime, from Wall

[15] "If This is a Bubble, It Sure is Hard to Pop," Wall Street Journal, March 30, 1999, pp. A1 and A6.

> Street saloons to American livingrooms. Perhaps baby boomers, intent on saving for retirement and their children's college tuition, see stocks as the only smart alternative. Perhaps Generation-Xers fear Social Security will vanish before they retire, and are bulking up on stocks. Perhaps mutual-fund marketing has diverted billions of dollars that once would have ended up in low-interest bank accounts. Perhaps the internet age has dispelled the mystique of the stock market; everyone can do it.

Traditional rate base/rate of return regulation, where a market-based common equity cost rate is applied to a book value rate base, presumes that market-to-book ratios are one. However, there is ample empirical evidence over sustained periods which demonstrate that this is an incorrect presumption. Market-to-book ratios of one are rarely the case as there are many factors affecting the market price of common stocks, in addition to earnings. Moreover, allowed ROEs have a limited effect on utilities' market/book ratios as market prices of common stocks are influenced by a number of other factors beyond the direct influence of the regulatory process.

For example, Phillips[16] states:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.'

[16] Id., at p. 395.

In addition, Bonbright[17] states:

> In the first place, commissions cannot forecast, except within wide limits, the effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, *whatever the initial market prices may be, they are sure to change not only with the changing prospects for earnings, but with the changing outlook of an inherently volatile stock market.* In short, market prices are beyond the control, though not beyond the influence of rate regulation. Moreover, even if a commission did possess the power of control, any attempt to exercise it ... would result in harmful, uneconomic shifts in public utility rate levels. (italics added)

In view of the foregoing, a mismatch results in the application of the DCF model as market prices reflect long range expectations 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.

Q. Please explain why a DCF-derived common equity cost rate mis-specifies investors' expected common equity cost rate when the market/book ratio is greater or less than unity (100%).

A. Under the DCF model, the rate of return investors require is related to the price paid for a stock i.e., market price is the basis upon which they formulate the required rate of return. A regulated utility is limited to earning on its net book value (depreciated original cost) rate base. As discussed previously, market values differ from book values for many reasons unrelated to earnings. Thus,

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[17] James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates, 1988, Public Utilities Reports, Inc., Arlington, VA, p. 334.

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 investors' 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.

Aqua Schedule 3.7 demonstrates how a market-based DCF cost rate applied to a book value which is either below or above market value will either understate or overstate investors' expectations because these expectations are based on a required return on market value. As shown, there is no realistic opportunity to earn the market-based rate of return on book value. Note that in Column 1, investors expect a 10.00% return on a market price of $24.00. Moreover, as shown in Column 2, when the 10.00% return rate on market value is applied to book value which is approximately 55.5% of market value, the total annual return opportunity is just $1.333 on book value. With an annual dividend of $0.960, there is an opportunity for growth of $0.373 which translates to just 1.55% in contrast to the 6.00% growth in market price expected by investors. There is no way to possibly achieve the expected growth of $1.440 or 6.00% absent a huge cut in the annual dividend, an unreasonable expectation which would result in an extremely adverse reaction by investors because it would be a sign of extreme financial distress.

Conversely, in Column 3, where the market-to-book ratio is 80%, when the 10.00% return rate on market value is applied to a book value which is approximately 25.0% greater than market value, the total annual return opportunity is $3.000 on book value with an annual dividend of $0.960, there is an opportunity for growth of $2.040 which translates to 8.50% in contrast to the

6.00% growth in market price expected by investors.

In view of the foregoing, it is clear that the DCF model either understates or overstates investors' required cost of common equity capital when market values exceed or are less than their underlying book values and thus multiple cost of common equity models should be relied upon when estimating investors' expectations.

Q. Have any commissions explicitly stated that the DCF model should not be relied upon exclusively?

A. Yes. As stated previously, the majority of regulatory commissions rely upon a combination of the various cost of common equity models available.

Specifically, the Iowa Utilities Board (IUB) has recognized the tendency of the DCF model to understate investors' expected cost of common equity capital when market values are significantly above their book values. In its June 17, 1994 Final Decision and Order in Re U.S. West Communications, Docket No. RPU-93-9 the IUB stated:[18]

> While the Board has relied in the past on the DCF model, in *Iowa Electric Light and Power Company*, Docket No. RPU-89-9, "Final Decision and Order" (October 15, 1990), the Board stated: '[T]he DCF model may understate the return on equity in some circumstances. This is particularly true when the market is relatively volatile and the company in question has a market-to-book ratio in excess of one." Those conditions exist in this case and the Board will not rely on the DCF return. (Consumer Advocate Ex. 367, See Tr. 2208, 2250, 2277, 2283-2284). *The DCF approach underestimates the cost of equity needed to assure capital attraction during this time of market uncertainty and volatility. The board will, therefore, give preference to the risk premium approach.* (italics added)

[18] Re: U.S. West Communications, Inc., Docket No. RPU-93-9, 152 PUR4th at 459.

Similarly, in 1994, the Indiana Utility Regulatory Commission (IURC), for example, recognized the tendency of the DCF model to understate the cost of equity when market value exceeds book value[19]:

> In determining a common equity cost rate, we must again recognize the tendency of the traditional DCF model, . . . to understate the cost of common equity. As the Commission stated in Indiana-Mich. Power Co. (BPU 8/24/90), Cause No. 38728, 116 PUR 4th 1, 17-18, *"the unadjusted DCF result is almost always well below what any informed financial analyst would regard as defensible, and therefore, requires an upward adjustment based largely on the expert witness's judgement."* (italics added)
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> * * *
>
> [u]nder the traditional DCF model . . . the appropriate earnings level of the utility would not be derived by applying the DCF result to the market price of the Company's stock . . . it would be applied to the utility's net original cost rate base. *If the market price of the stock exceeds its book value, . . . the investor will not achieve the return which the model finds is necessary.* (italics added)

Also, the Hawaii Public Utilities Commission (HPUC) recognized this phenomenon in a decision dated June 30, 1992[20] in a case regarding Hawaiian Electric Company, Inc., when it stated:

> In this docket, as in other rate proceedings, experts disagree on the relative merits of the various methods of determining the cost of common equity. In this docket, HECO is particularly critical of the use of the constant growth DCF methodology. It asserts that method is imbued with downward bias and, thus, its use will understate common equity cost. *We are cognizant of the shortcomings of the DCF method.* There are, however, shortcomings to be found with the use of CAPM and the RP methods as well. We reiterate that, despite the problems with the use of any methodology, *all methods should be considered and*

[19] Re: Indiana-American Water Company, Inc., Cause No. 39595, 150 PUR4th at 167-168.

[20] Re: Hawaiian Electric Company, Inc., Docket No. 6998, 134 PUR4th at 479.

that the DCF method and the combined CAPM and RP methods should be given equal weight. (italics added)

More recently, the Pennsylvania Public Utilities Commission, (PaPUC) in its January 16, 2004 Opinion and Order in Docket Nos. R-00038304 (PAWC) and C0001 through C00171 re: Pennsylvania-American Water Company (PAWC) stated:

> As we determined in PAWC's prior base rate base, at Docket No. R-00016339 (Order entered January 25, 2002), a 60 basis point adjustment to the market based common equity cost rate will compensate PAWC for the aforementioned application of a market based common equity cost rate to a book value common equity ratio.
>
> PAWC indicates that a preliminary DCF calculation, which is computed using the market price of PAWC's common stock, should be adjusted to reconcile the divergence between market and book values.
>
> We agree that a financial risk adjustment is proper. Accordingly, we find that, in order to place the computed DCF result on a consistent basis with the greater financial risk, inherent in PAWC's book value-derived capital structure ratios, a 60 basis point financial risk adjustment above our 10 percent representative DCF common equity cost rate recommendation is warranted.

Q. Do other cost of common equity models contain unrealistic assumptions and have shortcomings?

A. Yes. That is why I am not recommending that any of the models be relied upon exclusively. 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.

3. Application of the Single-Stage DCF Model

a. Dividend Yield

Q. Please describe the dividend yield you used in your application of the DCF model.

A. The unadjusted dividend yields are based upon an average of a recent spot date (December 7, 2004) as well as an average of the three months ended November 30, 2004, respectively, which are shown on Aqua Schedule 3.11. The average unadjusted yield is 3.2% for the six C.A. Turner water companies, 3.2% for the three Value Line (Std. Ed.) water companies, and 3.7% for the fifteen utilities selected on the basis of least relative distance.

b. Discrete Adjustment of Dividend Yield

Q. Please explain the dividend growth component shown on Aqua Schedule 3.9, pages 1 and 2, Column 2.

A. Because dividends are paid quarterly, or periodically, as opposed to continuously (daily), an adjustment to the dividend yield must be made. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

Since the various companies in the proxy group increase their quarterly dividend at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the D_1 expression, or $D_{1/2}$. This is a conservative approach which does not overstate the dividend yield which should be representative of the next twelve-month period. Therefore, the actual average dividend yields in Column 1 on pages 1 and 2 of Aqua Schedule 3.9 have been

adjusted upward to reflect one-half the growth rates shown in Column 4.

c. Selection of Growth Rates for Use in the Single-Stage DCF Model

Q. Please explain the basis of the growth rates of the proxy group of six C.A. Turner water companies, the proxy group of three Value Line (Std. Ed.) water companies, and the proxy group of fifteen utilities selected on the basis of least relative distance which you use in your application of the DCF model.

A. Aqua Schedule 3.12 indicates that 79.4% of the common shares of the proxy group of six C.A. Turner water companies, 70.0% of the common shares of the proxy group of three Value Line (Std. Ed.) water companies, and 53.4% of the common shares of the proxy group of fifteen utilities selected based on least relative distance are held by individuals as opposed to institutional investors. Individual investors are particularly likely to place great significance on the opinions expressed by financial information services, such as Value Line and Thomson FN/First Call, which are easily accessible and/or available on the Internet.

Forecasts by analysts, including Value Line, are typically limited to five years. In my opinion, I believe that investors in water utilities would have little interest in historical growth rates beyond the most recent five years because an historical five-year period balances the five-year period for projected growth rates. Consequently, the use of five-year historical and five-year projected growth rates in earnings per share (EPS) and dividends per share (DPS) as well as the sum of internal and external growth in per share value (BR + SV) is appropriate to consider in the determination of a growth rate for use in this application of the DCF model. In addition, investors realize that analysts have significant insight into the dynamics of the industries and they analyze individual

companies as well as companies' abilities to effectively manage the effects of changing laws and regulations. Consequently, I have reviewed analysts' projected growth in EPS, as well as historical and projected five-year compound growth rates in EPS, DPS and (BR + SV) for each company in each proxy group. The historical growth rates are from Value Line or calculated in a manner similar to Value Line, while the projected growth rates in earnings are from Value Line and Thomson FN/First Call forecasts. Thomson FN/First Call growth rate estimates are not available for DPS and internal growth, and they do not include the Value Line projections.

In addition to evaluating EPS and DPS growth rates, it is reasonable to assume that investors also assess (BR + SV). The concept is based on well documented financial theory that future dividend growth is a function of the portion of the overall return to investors which is reinvested in the firm plus the sales of new common stock. Consequently, the growth component as proxied by internal and external growth is defined as follows:

$$g = BR + SV$$

Where:

B = the fraction of earnings retained by the firm, i.e., retention ratio

R = the return on common equity

S = the growth in common shares outstanding

V = the premium/discount of a company's stock price relative to its book value, i.e., one minus the complement of the market/book ratio.

Consistent with the use of five-year historical and five-year projected growth rates in EPS and DPS, I have derived five-year historical and five-year projected (BR + SV) growth. Projected EPS growth rate averages are shown in Column 4 on page 2, while historical and projected growth in DPS, EPS, and BR

+ SV is shown in Column 4, page 1 of Aqua Schedule 3.9. The bases of these growth rates are summarized for the companies in each proxy group on page 1, Aqua Schedule 3.13. Supporting growth rate data are detailed on pages 2 through 9 of Aqua Schedule 3.13, while pages 10 through 25 contain all of the most current Value Line Investment Survey data for the companies in all three proxy groups.

d. *Conclusion of Single-Stage Cost Rates*

Q. Please summarize the single-stage growth DCF model results.

A. As shown on Aqua Schedule 3.9, the results of the applications of the single-stage DCF model are 10.5% for the proxy group of six C.A. Turner water companies, 10.9% for the proxy group of three Value Line (Std. Ed.) water companies, and 10.7% for the proxy group of fifteen utilities. In arriving at conclusions of indicated common equity cost rates for the two proxy groups, I included only those single-stage DCF results which are greater than 200 basis points above the average prospective yield on Moody's A rated public utility bonds of 6.6%, or 8.6%, based upon Blue Chip Financial Forecasts' December 1, 2004 consensus forecast of about 50 economists of the expected yield on Aaa rated corporate bonds as discussed subsequently and derived in Note 3 on page 6 of Aqua Schedule 3.14. It is necessary to adjust the average Aaa rated corporate bond yield to be equivalent to a Moody's A2 rated public utility bond. As detailed in Note 2 on page 1 of Aqua Schedule 3.14, an adjustment to the average prospective yield on Aaa rated corporate bonds of 0.5% was required. Thus, the average prospective yield on Moody's A rated public utility bonds is 6.6%.

Based upon a review of recent authorized returns on common equity

(ROE) in Illinois vis-à-vis concurrent estimates of the forecasted average yield on A rated public utility bonds, I determined that the equity risk premium implicit in recent ICC authorized ROEs is between 300 and 450 basis points. In addition, the ICC's authorized common equity cost rate for Aqua IL in Docket No. 04-0403 of 10.16% entered April 16, 2004 was 356 basis points above the then prospective yield on A rated public utility bonds of 6.6%. In accordance with the EMH, investors are aware of these implicit equity risk premia and, in my opinion, would not consider returns providing an equity risk premium of only 200 basis points either reasonable or credible. Therefore, it is reasonable, if not conservative, to eliminate any single-stage DCF results which are no more than 200 basis points above the current prospective average yield on A rated public utility bonds of 6.6%.

4. Application of the Quarterly Version of the DCF Model

Q. Please describe the quarterly version of the DCF model which you use to calculate the indicated common equity cost rates.

A. The traditional, or annual, single-stage, DCF model is based upon the assumption that dividends are paid annually. Virtually every utility pays dividends on a quarterly basis. The quarterly DCF model takes into account the reality of quarterly payments of dividends to investors. As Morin states[21] (Aqua Schedule 3.10, page 5):

> By analogy, a bank rate on deposits that does not take into consideration the timing of the interest payments understates the true yield if the customer receives the interest payments more than one a year. The actual yield will exceed the stated nominal rate.

[21] Id., p. 184.

The form of the model employed is shown in detail in Equation (7-2) shown on Aqua Schedule 3.10, page 5, an excerpt from Morin's text, Regulatory Finance: Utilities' Cost of Capital.

a. Selection of Market Prices for Use in the Quarterly Version of the DCF Model

Q. What periods of time have you used for market prices in order to employ the quarterly DCF model?

A. As indicated in Aqua Schedule 3.10, I employed the recent spot market prices as of December 7, 2004 as well as average market prices for the three months ended November 30, 2004 consistent with my application of the single-stage DCF model previously discussed.

b. Selection of Growth Rates for Use in the Quarterly Version of the DCF Model

Q. What growth rates did you use in your application of the quarterly version of the DCF model?

A. I utilized growth rates for each company based upon historical and projected growth in DPS, EPS, and BR+SV as well as based upon average projected growth in EPS calculated in a manner identical to the average growth rates for each proxy group previously discussed in this testimony.

c. Conclusion of Quarterly Version DCF Cost Rates

Q. Please summarize the quarterly DCF model results.

A. As shown on Aqua Schedule 3.10, pages 1 and 2, the results of the application of the quarterly version of the DCF model are 10.7% for the proxy group of six

C.A. Turner water companies, 11.1% for the proxy group of three Value Line (Std. Ed.) water companies, and 10.8% for the proxy group of fifteen utilities. As explained in detail above relative to the single-stage DCF model results, I also eliminated those quarterly DCF model results which were no more than 200 basis points above the prospective average yield on Moody's A rated public utility bonds of 6.6%, or 8.6%.

5. Conclusion of DCF Cost Rates

Q. Please summarize the DCF model results.

A. As shown on Aqua Schedule 3.8, the results of the applications of the DCF models are 10.6% for the proxy group of six C.A. Turner water companies, 11.0% for the proxy group of three Value Line (Std. Ed.) water companies, and 10.8% for the proxy group of fifteen utilities selected on the basis of least relative distance.

C. The Risk Premium Model (RPM)

1. Theoretical Basis

Q. Please describe the theoretical basis of the RPM.

A. Risk Premium theory indicates that the cost of common equity capital is greater than the prospective company-specific cost rate for long-term debt capital. In other words, the cost of common equity equals the expected cost rate for long-term debt capital plus a risk premium to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on the corporation's assets and earnings.

Q. Some analysts state that the RPM is another form of the CAPM. Do you agree?

A. While there are some similarities, there is a very significant distinction between the two models. The RPM and CAPM both add a "risk premium" to an interest rate. However, the beta approach to the determination of an equity risk premium in the RPM should not be confused with the CAPM. Beta is a measure of systematic, or market, risk, a relatively small percentage of total risk (the sum of both non-diversifiable systematic and diversifiable unsystematic risk). Unsystematic risk is fully captured in the RPM through the use of the prospective long-term bond yield as can be shown by reference to pages 3 through 9 of Aqua Schedule 3.2, which confirm that the bond rating process involves an assessment of all business and financial risks. In contrast, the use of a risk-free rate of return in the CAPM does not, and by definition cannot, reflect a company's specific i.e., unsystematic risk. Consequently, a much larger portion of the total common equity cost rate is reflected in the company-specific bond yield (a product of the bond rating) than is reflected in the risk-free rate in the CAPM, or indeed even by the dividend yield employed in the DCF model. Moreover, the financial literature recognizes the RPM and CAPM as two separate and distinct cost of common equity models as discussed previously.

Q. Have you performed RPM analyses of common equity cost rate for the two proxy groups?

A. Yes. The results of my application of the RPM are summarized on page 1 of Aqua Schedule 3.14. On Line No. 3, page 1, Aqua Schedule 3.14, I show the average expected yield on A rated public utility bonds of 6.6%. On Line No. 4, I show the adjustments, if necessary, that need to be made to the average 6.6%

expected A rated utility bond yield so that the expected yields of 6.6% and 6.7% in Line No. 5 are reflective of the proxy group of six C.A. Turner water companies' average Moody's bond rating of A2, the average Moody's bond rating of the three Value Line (Std. Ed.) water companies of A2, and the average Moody's bond rating of A3 for the proxy group of fifteen utilities selected on the basis of least relative distance as shown on page 2 of Aqua Schedule 3.14. On Line No. 6 of page 1, my conclusion of an equity risk premium applicable to each proxy group is shown, while the total risk premium common equity cost rates are shown on Line No. 7.

2. Estimation of Expected Bond Yield

Q. Please explain the basis of the expected bond yield of 6.6% applicable to the average company in both proxy groups.

A. Because the cost of common equity is prospective, a prospective yield on similarly-rated long-term debt is essential. As shown on Aqua Schedule 3.14, page 2, the average Moody's bond rating is A2 for both the proxy group of six C.A. Turner water companies and the three Value Line (Std. Ed.) water companies, and A3 for the proxy group of fifteen utilities. I relied upon a consensus forecast of about 50 economists of the expected yield on Aaa rated corporate bonds for the six calendar quarters ending with the first calendar quarter of 2006 as derived from the December 1, 2004 Blue Chip Financial Forecasts (shown on page 7 of Aqua Schedule 3.14). As shown on Line No. 1 of page 1 of Aqua Schedule 3.14, the average expected yield on Moody's Aaa rated corporate bonds is 6.1%. It is necessary to adjust that average yield to be equivalent to a Moody's A2 rated public utility bond. Consequently, an adjustment to the average prospective yield on Aaa rated corporate bonds of

0.5% was required. It is shown on Line No. 2, page 1 of Aqua Schedule 3.14 and explained in Note 2 at the bottom of the page. After adjustment, the expected bond yield applicable to a Moody's A rated public utility bond is 6.6% as shown on Line No. 3, page 1 of Aqua Schedule 3.14.

Because both the proxy group of six C.A. Turner water companies' and the proxy group of three Value Line (Std. Ed.) water companies' average Moody's bond rating is A2, no adjustment is necessary to make the prospective bond yield applicable to an A2 public utility bond. In addition, because the proxy group of fifteen utilities selected on the basis of least relative resistance average Moody's bond rating is A3, an adjustment of the expected yield on A rated public utility bonds of 6.6% is necessary. As described in Note 4 on page 1 of Aqua Schedule 3.14, such an adjustment rounds to 0.0%. Therefore, the expected specific bond yield is 6.6% for both proxy groups of water companies and 6.7% for the proxy group of fifteen utilities.

3. Estimation of the Equity Risk Premium

Q. Please explain the method utilized to estimate the equity risk premium.

A. I evaluated the results of two different historical equity risk premium studies, as well as Value Line's forecasted total annual market return in excess of the prospective yield on high grade corporate bonds, as detailed on pages 5, 6 and 8 of Aqua Schedule 3.14. As shown on Line No. 3, page 5 of Aqua Schedule 3.14, the mean equity risk premium based on both of the studies is 4.0% applicable to the proxy group of six C.A. Turner water companies and 4.2% applicable to both the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance. These estimates are the result of an average of a beta-derived

historical equity risk premium and a forecasted total market equity risk premium as well as the mean historical equity risk premium applicable to public utilities with bonds rated A based upon holding period returns.

The basis of the beta-derived equity risk premia applicable to the proxy groups is shown on page 6 of Aqua Schedule 3.14. Beta-determined equity risk premia should receive substantial weight because betas are derived from the market prices of common stocks over a recent five-year period. Beta is a meaningful measure of prospective relative risk to the market as a whole and is a logical means by which to allocate a relative share of the market's total equity risk premium.

The total market equity risk premium utilized is 5.7% and is based upon an average of both the long-term historical and forecasted market risk premia of 6.3% and 5.1%, respectively, as shown on page 6 of Aqua Schedule 3.14. To derive the historical market equity risk premium, I used the most recent Ibbotson Associates' data on holding period returns for the S&P 500 Composite Index and Salomon Brothers Long-term High-grade Corporate Bond Index covering the period 1926-2003. The use of holding period returns over a very long period of time is useful in the beta approach. As Ibbotson Associates'[22] Valuation Edition 2004 Yearbook states:

> The estimate of the equity risk premium depends on the length of the data series studied. A proper estimate of the equity risk premium requires a data series long enough to give a reliable average without being unduly influenced by very good and very poor short-term returns. When calculated using a long data series, the historical equity risk premium is relatively stable.[5] Furthermore, because an average of the realized equity risk premium is quite volatile when calculated using a short history, using a long series makes it less likely that the analyst can justify any number he or she wants. The magnitude of how shorter

[22] Ibbotson Associates, Stocks, Bonds, Bills and Inflation – Valuation Edition 2004 Yearbook, pp. 76-77.

periods can affect the result will be explored later in this chapter.

> Some analysts estimate the expected equity risk premium using a shorter, more recent time period on the basis that recent events are more likely to be repeated in the near future; furthermore, they believe that the 1920s, 1930s and 1940s contain too many unusual events. This view is suspect because all periods contain "unusual" events. Some of the most unusual events this century took place quite recently, including the inflation of the late 1970s and early 1980s, the October 1987 stock market crash, the collapse of the high-yield bond market, the major contraction and consolidation of the thrift industry, the collapse of the Soviet Union, and the development of the European Economic Community -- all of these happened in the last 20 years.
>
> It is even difficult for economists to predict the economic environment of the future. For example, if one were analyzing the stock market in 1987 before the crash, it would be statistically improbable to predict the impending short-term volatility without considering the stock market crash and market volatility of the 1929-1931 period.
>
> Without an appreciation of the 1920s and 1930s, no one would believe that such events could happen. The 78-year period starting with 1926 is representative of what can happen: it includes high and low returns, volatile and quiet markets, war and peace, inflation and deflation, and prosperity and depression. Restricting attention to a shorter historical period underestimates the amount of change that could occur in a long future period. Finally, because historical event-types (not specific events) tend to repeat themselves, long-run capital market return studies can reveal a great deal about the future. Investors probably expect "unusual" events to occur from time to time, and their return expectations reflect this. (footnote omitted)

In addition, the use of long-term data in a RPM model is consistent with the long-term investment horizon presumed by the DCF model. Consequently, the long-term arithmetic mean total return rates on the market as a whole of 12.4% and the long-term arithmetic mean yield on corporate bonds of 6.1% were used, as shown at Line Nos. 1 and 2 of page 6 of Aqua Schedule 3.14. As shown on Line No. 3 of page 6, the resultant long-term historical equity risk

premium on the market as a whole is 6.3%.

I used arithmetic mean return rates because they are appropriate for cost of capital purposes. As Ibbotson Associates state in their Valuation Edition 2004 Yearbook[23]:

> 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.
>
> The argument for using the arithmetic average is quite straightforward. In looking at projected cash flows, the equity risk premium that should be employed is the equity risk premium that is expected to actually be incurred over the future time periods. Graph 5-3 shows the realized equity risk premium for each year based on the returns of the S&P 500 and the income return on long-term government bonds. (The actual, observed difference between the return on the stock market and the riskless rate is known as the realized equity risk premium.) There is considerable volatility in the year-by-year statistics. At times the realized equity risk premium is even negative.

As Ibbotson Associates[24] states in their 1999 Yearbook:

> The expected equity risk premium should always be calculated using the arithmetic mean. The arithmetic mean is the rate of return which, when compounded over multiple periods, gives the mean of the probability distribution of ending wealth values....Stated another way, the arithmetic mean is correct because an investment with uncertain returns will have a higher expected ending wealth value than an investment which earns,

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[23] Id., p. 71.

[24] Ibbotson Associates, Stocks, Bonds, Bills and Inflation - 1999 Yearbook, pp. 157-158.

> with certainty, its compound or geometric rate of return every year....*Therefore, in the investment markets, where returns are described by a probability distribution, the arithmetic mean is the measure that accounts for uncertainty, and is the appropriate one for estimating discount rates and the cost of capital.* (italics added)

Ex-post (historical) total returns and equity risk premium spreads differ in size and direction over time. This is precisely why the arithmetic mean is important as it provides insight into the variance and standard deviation of returns. This prospect for variance, as captured in the arithmetic mean, provides the valuable insight needed by investors to estimate future risk when making a current investment. Absent such valuable insight into the potential variance of returns, investors cannot meaningfully evaluate prospective risk. As discussed previously, all of the cost of common equity models, including the DCF, are premised upon the EMH, that all publicly available information is reflected in the market prices paid. If investors relied upon the geometric mean of ex-post spreads, they would have no insight into the potential variance of future returns because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, *critical to risk analysis*.

The basis of the forecasted market equity risk premium can be found on Line Nos. 4 through 6 on page 6 of Aqua Schedule 3.14. It is derived from an average of the most recent 3-month (using the months of September 2004 through November 2004) and a recent spot (December 3, 2004) median market price appreciation potentials by Value Line as explained in detail in Note 1 on page 3 of Aqua Schedule 3.15. The average expected price appreciation is 42% which translates to 9.54% per annum and, when added to the average (similarly calculated) dividend yield of 1.64% equates to a forecasted annual total return rate on the market as a whole of 11.18%, rounded to 11.2%. Thus, this methodology is consistent with the use of the 3-month and spot dividend yields in

my application of the DCF model. To derive the forecasted total market equity risk premium of 5.1% shown on Aqua Schedule 3.14, page 6, Line No. 6, the December 1, 2004 forecast of about 50 economists of the expected yield on Moody's Aaa rated corporate bonds for the six calendar quarters ending with the first calendar quarter 2006 of 6.1% from Blue Chip Financial Forecasts was deducted from the Value Line total market return of 11.2%. The calculation resulted in an expected market risk premium of 5.1%.

The average of the historical and projected market equity risk premia of 6.3% and 5.1% is 5.7%.

On page 9 of Aqua Schedule 3.14, the most current Value Line (Standard Edition) betas for the companies in all three proxy groups are shown. Applying the average beta of each proxy group to the average market equity risk premium of 5.7% results in a beta adjusted equity risk premium of 3.8% for the proxy group of six C.A. Turner water companies, 4.1% for both the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance as shown on Aqua Schedule 3.14, page 6, Line No. 9.

A mean equity risk premium of 4.2% applicable to companies with A rated public utility bonds was calculated based upon holding period returns from a study using public utilities, as shown on Line No. 2, page 5 of Aqua Schedule 3.14, and detailed on page 8 of the same schedule.

The equity risk premia applicable to the proxy group of six C.A. Turner water companies, the proxy group of three Value Line (Std. Ed.) water companies, and to the proxy group of fifteen utilities selected on the basis of least relative distance are the averages of the beta-derived premia and that based upon the holding period returns of public utilities with A rated bonds, as summarized on Aqua Schedule 3.14, page 5, i.e., 4.0%, 4.2%, and 4.2%,

respectively.

Q. What are the RPM calculated common equity cost rates?

A. They are 10.6% for the six C.A. Turner water companies, 10.8% for the three Value Line (Std. Ed.) water companies, and 10.9% for the fifteen utilities as shown on Aqua Schedule 3.14, page 1.

Q. Some critics of the RPM model claim that its weakness is that it presumes a constant equity risk premium. Is such a claim valid?

A. No. The equity risk premium varies inversely with interest rate changes, although not in tandem with those changes. This presumption of a constant equity risk premium is no different than the presumption of a constant "g", or growth component, in the DCF model. If one calculates a DCF cost rate today, the absolute result "k", as well as the growth component "g", would invariably differ from a calculation made just one or several months earlier. This implies that the "g" does change, although in the application of the standard DCF model, the "g" is presumed to be constant. Hence, there is no difference between the RPM and DCF models in that both models assume a constant component, but in reality, these components, the "g" and the equity risk premium both change.

As Morin[25] states with respect to the DCF model:

> It is not necessary that *g* be constant year after year to make the model valid. *The growth rate may vary randomly around some average expected value. Random variations around trend are perfectly acceptable, as long as the mean expected growth is constant.* The growth rate must be 'expectationally constant' to

[25] Id., p. 111.

use formal statistical jargon. (italics added)

The foregoing confirms that the RPM is similar to the DCF model. Both assume an "expectationally constant" risk premium and growth rate, respectively, but in reality both vary (change) randomly around an arithmetic mean. Consequently, the use of the arithmetic mean, and not the geometric mean is confirmed as appropriate in the determination of an equity risk premium as discussed previously.

D. The Capital Asset Pricing Model (CAPM)

1. Theoretical Basis

Q. Please explain the theoretical basis of the CAPM.

A. CAPM theory defines risk as the covariability of a security's returns with the market's returns. This covariability is measured by beta ("β"), an index measure of an individual security's variability relative to the market. A beta less than 1.0 indicates lower variability while a beta greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all other risk, i.e., all non-market or unsystematic risk, can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market, or systematic, risk. The CAPM presumes that investors require compensation for risks that cannot be eliminated through diversification. Systematic risks are caused by macroeconomic and other events that affect the returns on all assets. Essentially, the model is applied by adding a risk-free rate of return to a market risk premium. This market risk premium is adjusted proportionately to reflect the systematic risk of the individual security relative to the market as measured by beta. The traditional CAPM model is expressed as:

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

Where:

R_s	=	Return rate on the common stock
R_f	=	Risk-free rate of return
R_m	=	Return rate on the market as a whole
β	=	Adjusted beta (volatility of the security relative to the market as a whole)

Numerous tests of the CAPM have confirmed its validity. These tests have measured the extent to which security returns and betas are related as predicted by the CAPM. However, Morin observes that while the results support the notion that beta is related to security returns, it has been determined that the empirical Security Market Line (SML) described by the CAPM is not as steeply sloped as the predicted SML. Morin[26] states:

> With few exceptions, the empirical studies agree that ... low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\,\beta(R_M - R_F) + (1-x)\;\beta(R_M - R_F)$$
>
> where x is a fraction to be determined empirically. ...the value of x that best explains the observed relationship is between 0.25 and 0.30. If x = 0.25, the equation becomes:
>
> $$K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$[27]

[26] Id., at p. 321.

[27] Id., at pp. 335-336.

In view of theory and practical research, I have applied both the traditional CAPM and the empirical CAPM to the companies in the proxy groups and averaged the results.

2. Risk-Free Rate of Return

Q. Please describe your selection of a risk-free rate of return.

A. My applications of the traditional and empirical CAPM are summarized on Aqua Schedule 3.15, page 1. As shown on Line Nos. 1 and 4, the risk-free rate adopted for both applications is 5.4%. It is based upon the average consensus forecast of the reporting economists in the December 1, 2004 Blue Chip Financial Forecasts as shown in Note 2, page 4, of the expected yields on long-term U.S. Treasury bonds for the six quarters ending with the first calendar quarter 2006.

Q. Why is the prospective yield on long-term U.S. Treasury Bonds appropriate for use as the risk-free rate?

A. The yield on long-term T-Bonds is almost risk-free and its term is consistent with the long-term cost of capital to public utilities measured by the yields on A rated public utility bonds, and is consistent with the long-term investment horizon inherent in utilities' common stocks. Therefore, it is consistent with the long-term investment horizon presumed in the standard DCF model employed in regulatory ratemaking. Moreover, Morin[28] states:

Equity investors generally have an investment horizon far in

[28] Id., at p. 308.

> excess of fifty days. More importantly, the short-term T-bill yields reflect the impact of factors different from those influencing long-term securities, such as common stock. For example, the premium for expected inflation absorbed into 90-day Treasury bills is likely to be far different than the inflationary premium absorbed into long-term securities yields. The yields on long-term Treasury bonds match more closely with common stock returns. *For investors with a long time horizon, a long-term government bond is almost risk-free.* (italics added)

In addition, Ibbotson Associates note in their Valuation Edition 2003 Yearbook[29]

> The horizon of the chosen Treasury security should match the horizon of whatever is being valued. When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a long-term Treasury bond. Note that the horizon is a function of the investment, not the investor.

In conclusion, the average expected yield on long-term Treasury Bonds is the appropriate proxy for the risk-free rate in the CAPM because it is less volatile than yields on Treasury Bills, is almost risk-free as noted by Morin above and is consistent with the long-term investment horizon implicit in common stocks.

3. Market Equity Risk Premium

Q. Please explain the estimation of the expected equity risk premium for the market.

A. First, I estimate investors' expected total return rate for the market. Then I estimate the expected risk-free rate which I subtract from the expected total return rate for the market. The result is an expected equity risk premium for the market, some proportion of which must be allocated to the companies in the proxy group through the use of beta. As a measure of risk relative to the market

[29] Id., p. 53.

as a whole, the beta is an appropriate means by which to apportion the market risk premium to a specific company or group.

As shown on Aqua Schedule 3.15, page 1, Line No. 2, the proportional market equity risk premium, based on the traditional CAPM, is 4.3% for the proxy group of six C.A. Turner water companies and 4.7% for both the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance. Applying the empirical CAPM results in an equity risk premium of 4.8% for the six C.A. Turner water companies and 5.1% for both the three Value Line (Std. Ed.) water companies and the fifteen utilities as shown on Line No. 5 on page 1 of Aqua Schedule 3.15. The total market equity risk premium utilized was 6.5% and is based upon an average of the long-term historical and projected market risk premia.

The basis of the projected median market equity risk premium is explained in detail in Note 1 on page 4 of Aqua Schedule 3.15. As previously discussed, it is derived from an average of the most recent 3-month (using the months of September 2004 through November 2004) and a recent spot (December 3, 2004) 3 - 5 year median total market price appreciation projections from Value Line, and the long-term historical average from Ibbotson Associates. The appreciation projections by Value Line plus average dividend yield equate to a forecasted annual total return rate on the market of 11.2%. The long-term historical return rate of 12.4% on the market as a whole is from Ibbotson Associates' Stocks, Bonds, Bills and Inflation - Valuation Edition 2004 Yearbook. In each instance, the relevant risk-free rate was deducted from the total market return rate. For example, from the Value Line projected total market return of 11.2%, the forecasted average risk-free rate of 5.4% was deducted indicating a forecasted market risk premium of 5.8%. From the Ibbotson Associates' long-term historical total return rate of 12.4%, the long-term historical income return

rate on long-term U.S. Government Securities of 5.2% was deducted indicating an historical equity risk premium of 7.2%. Thus, the average of the projected and historical total market risk premia of 5.8% and 7.2%, respectively, is 6.5%.

Q What are the results of your applications of the traditional and empirical CAPM to the proxy groups?

A. As shown on Aqua Schedule 3.15, Line No. 3 of page 1, the traditional CAPM cost rate is 9.7% for the proxy group of six C.A. Turner water companies and 10.1% for both the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance. And, as shown on Line No. 6 of page 1, the empirical CAPM cost rate is 10.2% for the six water companies and 10.5% for both the three Value Line (Std. Ed.) water companies and the fifteen utilities. The traditional and empirical CAPM cost rates are shown individually by company on pages 2 and 3 of Aqua Schedule 3.15. As shown on Line No. 7, the CAPM cost rate applicable to the proxy group of six C.A. Turner water companies is 10.0%, 10.3% applicable to the proxy group of three Value Line (Std. Ed.) water companies, and 10.3% applicable to the proxy group of fifteen utilities based upon the traditional and empirical CAPM results.

Q. Some critics of the ECAPM model claim that using adjusted betas in a traditional CAPM amounts to using an ECAPM. Is such a claim valid?

A. No. Frank J. Hanley, President, AUS Consultants - Utility Services and a colleague of mine, has been in communication with Dr. Roger A. Morin of Georgia State University and the author of Regulatory Finance – Utilities' Cost of

Capital (1994, Public Utility Reports, Inc., Arlington, VA). Via e-mail, Dr. Morin has indicated that the ECAPM compensates for CAPM's inherent bias by ascribing a higher intercept and flatter slope to CAPM. It is not an attempt to increase beta. In his e-mail of August 31, 2000, Dr. Morin states:

> There are two distinct separate issues involved when implementing the CAPM. First, given the validity of the standard CAPM, what is the best proxy for expected beta? Second, and more fundamentally, does the standard form of the CAPM provide the best explanation of the risk-return relationship observed on capital markets?

Regarding the standard, or traditional, CAPM, Dr. Morin also states:

> There have been countless empirical tests of the CAPM to determine to what extent security returns and betas are related in the manner predicted by the CAPM. The results of the tests support the idea that beta is related to security returns, that the risk-return tradeoff is positive, and that the relationship is linear. The contradictory finding is that the risk-return tradeoff is not as steeply sloped as the predicted CAPM. That is, low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. This is one of the most well-know results in finance. A CAPM-based estimate of cost of capital underestimates the return required from low-beta securities and overstates the return from high-beta securities, based on the empirical evidence. The empirical form of the CAPM refines the standard form of the CAPM to account for this phenomenon.
>
> Thus, I do not share the view that the ECAPM is equivalent to a beta adjustment. For utility stocks with betas less than one, the CAPM understates the return. The ECAPM allows for the CAPM's inherent bias by ascribing a higher intercept and flatter slope to the CAPM. The ECAPM is a return (Y-axis, vertical axis) adjustment. It is not a beta risk (X-axis, horizontal) adjustment. The ECAPM is not an attempt to increase the beta estimate, which would be a horizontal x-axis adjustment. The ECAPM is a return adjustment rather than a risk adjustment. (emphasis added.)

Dr. Morin also indicates in his correspondence with Mr. Hanley that there "is a huge financial literature which supports both the use of the ECAPM and the use of adjusted betas."

Moreover, regulatory support for the ECAPM can be found in the New York Public Service Commission's Generic Financing Docket, Case 91-M-0509. In addition, the Regulatory Commission of Alaska (RCA) in its Order No. 151 in Docket No. P-97-4 re: In the Matter of the Correct Calculation and Use of Acceptable Input Data to Calculate the 1997, 1998, 1999, 2000, 2001 and 2002 Tariff Rates for the Intrastate Transportation of Petroleum over the TransAlaska Pipeline System notice:

> Although we primarily rely upon Tesoro's recommendation, we are concerned, however, about Tesoro's CAPM analysis. Tesoro averaged the results it obtained from CAPM and ECAPM while at the same time providing empirical testimony[604] that the ECAPM results are more accurate then [sic] traditional CAPM results. The reasonable investor would be aware of these empirical results. Therefore, we adjust Tesoro's recommendation to reflect only the ECAPM result.

Moreover, the slope of the Security Market Line (SML) should not be confused with beta. As Eugene F. Brigham, finance professor emeritus and the author of many financial textbooks states[30] :

> The slope of the SML reflects the degree of risk aversion in the economy – the greater the average investor's aversion to risk, then (1) the steeper is the slope of the line, (2) the greater is the risk premium for any risky asset, and (3) the higher is the required rate of return on risky assets.[12]
>
> [12]Students sometimes confuse beta with the slope of the SML. This is a mistake. As we saw earlier in connection with Figure 6-8, and as is developed further in Appendix 6A, beta does represent the slope of a line, but *not* the Security Market Line. This confusion arises partly because the SML equation is generally written, in this book and throughout the finance literature, as $k_i = R_F + b_i(k_M - R_F)$, and in this form b_i looks like the slope coefficient and $(k_M - R_F)$ the variable. It would perhaps be less confusing if the second term were written $(k_M - R_F)b_i$, but this is not generally done.

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[30] Eugene F. Brigham, Financial Management – Theory and Practice, 4th Ed., The Dryden Press, 1985, p. 203.

In view of the foregoing, using adjusted betas in an ECAPM analysis is not incorrect, nor inconsistent with the financial literature. Rather, the use of the traditional CAPM results in an understated estimate of the cost of common equity capital for a utility with an adjusted beta below 1.00. And notwithstanding regulatory support for the use of only the ECAPM, my CAPM analysis, which includes both the traditional CAPM and the ECAPM, is a conservative approach resulting in a reasonable estimate of the cost of common equity

E. Comparable Earnings Model (CEM)

1. Theoretical Basis

Q. Please describe your application of the Comparable Earnings Model and how it is used to determine common equity cost rate.

A. My application of the CEM is summarized on Aqua Schedule 3.16 which consists of eight pages. Pages 1 and 2 show the CEM results for the proxy group of six C.A. Turner water companies, pages 3 and 4 show the CEM result for the proxy group of three Value Line (Std. Ed.) water companies, and pages 5 and 6 show the CEM results for the proxy group of fifteen utilities selected on the basis of least relative distance. Pages 7 and 8 contain notes related to pages 1 through 6.

The comparable earnings approach is derived from the "corresponding risk" standard of the landmark cases of the U.S. Supreme Court. Therefore, it is consistent with the Hope doctrine that the return to the equity investor should be commensurate with returns on investments in other firms having corresponding risks.

The CEM is based upon the fundamental economic concept of

opportunity cost 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. The opportunity cost 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, in this case net worth, of similar risk enterprises. Thus, it provides a direct measure of return, since it translates into practice the competitive principle upon which regulation rests. In my opinion, it is inappropriate to use the achieved returns of regulated utilities of similar risk because to do so would be circular and inconsistent with the principle of equality of risk with non-price regulated firms.

The difficulty in application of the CEM is to select a proxy group of companies which are similar in risk, but are not price regulated utilities. Consequently, the first step in determining a cost of common equity using the comparable earnings model is to choose an appropriate proxy group of non-price regulated firms. The proxy group should be broad-based in order to obviate any company-specific aberrations. As stated previously, utilities need to be eliminated to avoid circularity since the returns on book common equity of utilities are substantially influenced by regulatory awards and are therefore not representative of the returns that could be earned in a truly competitive market.

2. Application of the CEM

Q. Please describe your application of the CEM.

A. My application of the CEM is market-based in that the selection of non-price regulated firms of comparable risk is based upon statistics derived from the

market prices paid by investors.

I have chosen three proxy groups of domestic, non-price regulated firms to reflect both the systematic and unsystematic risks of the proxy group of six C.A. Turner water companies, the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance, respectively. The proxy group of seventy-nine non-utility companies similar in risk to the proxy group of six C.A. Turner water companies, of ninety-seven non-utility companies similar in risk to the proxy group of three Value Line (Std. Ed.) water companies and seventy-one non-utility companies similar in risk to the proxy group of fifteen utilities selected on the basis of least relative distance are listed on pages 1 through 6, Aqua Schedule 3.16. The criteria used in the selection of these proxy companies were that they be domestic non-utility companies and have a meaningful rate of return on net worth, common equity or partners' capital reported in Value Line (Standard Edition) for each of the five years ended 2003, or projected for 2007-2009. Value Line betas were used as a measure of systematic risk. The standard error of the regression was used as a measure of each firm's specific, i.e., unsystematic risk. The standard error of the regression reflects the extent to which events specific to a company's operations will affect its stock price and, therefore, is a measure of diversifiable, unsystematic, company-specific risk. *In essence, companies which have similar betas and standard errors of the regressions, have similar investment risk, i.e., the sum of systematic (market) risk as reflected by beta and unsystematic (business and financial) risk, as reflected by the standard error of the regression, respectively. Those statistics are derived from regression analyses using market prices which, under the EMH reflect all relevant risks. The application of these criteria results in proxy groups of non-price regulated firms similar in risk to the average company in each proxy group.*

Using a Value Line, Inc. database dated September 16, 2004, the proxy group of seventy-nine non-price regulated companies were chosen based upon ranges of unadjusted beta and standard error of the regression. The ranges were based upon the average standard deviations of the unadjusted beta and the average standard error of the regression for the proxy group of six C.A. Turner water companies.

The six C.A. Turner water companies in the proxy group have an average unadjusted beta of 0.45 whose standard deviation is 0.1014 as of September 16, 2004, as shown on page 2, Aqua Schedule 3.16. The average standard error of the regression is 3.7805 as also shown on Aqua Schedule 3.14, page 2 with a standard deviation of 0.1661 as derived in Note 5, page 7 of Aqua Schedule 3.16. Ranges of unadjusted betas from 0.15 to 0.75 and of standard errors of the regression from 3.2822 to 4.2788 were used to select the proxy group of seventy-nine domestic non-utility companies comparable to the profile of the proxy group of six C.A. Turner water companies as can be gleaned from pages 1 and 2 and explained in Note 1 on page 4 of Aqua Schedule 3.16. These ranges are based upon the proxy group's average unadjusted beta of 0.45 and average standard error of the regression of 3.7805 plus or minus three standard deviations of beta (0.1014 x 3 = 0.3042) and standard error of the regressions (0.1661 x 3 = 0.4983). The use of three standard deviations assures capturing 99.73% of the distribution of unadjusted betas and standard errors, assuring comparability.

Likewise, using the same Value Line, Inc. database dated September 16, 2004, the proxy group of ninety-seven non-price regulated companies were chosen based upon ranges of unadjusted beta and standard error of the regression. The ranges were based upon the average standard deviations of the unadjusted beta and the average standard error of the regression for the proxy group of three Value Line (Std. Ed.) water companies.

The three Value Line (Std. Ed.) water companies in the proxy group have an average unadjusted beta of 0.54 whose standard deviation is 0.0940 as of September 16, 2004, as shown on page 4, Aqua Schedule 3.16. The average standard error of the regression is 3.6320 as also shown on Aqua Schedule 3.16, page 4 with a standard deviation of 0.1596 as derived in Note 10, page 8 of Aqua Schedule 3.16. Ranges of unadjusted betas from 0.26 to 0.82 and of standard errors of the regression from 3.1532 to 4.1108 were used to select the proxy group of ninety-seven domestic non-utility companies comparable to the profile of the proxy group of three Value Line (Std. Ed.) water companies as can be gleaned from pages 3 and 4 and explained in Note 9 on pages 7 and 8 of Aqua Schedule 3.16. These ranges are based upon the proxy group's average unadjusted beta of 0.54 and average standard error of the regression of 3.6320 plus or minus three standard deviations of beta (0.0940 x 3 – 0.2820) and standard error of the regressions (0.1596 x 3 = 0.4788). The use of three standard deviations assures capturing 99.73% of the distribution of unadjusted betas and standard errors, assuring comparability.

In addition, using the same Value Line, Inc. database dated September 16, 2004, the proxy group of seventy-one non-price regulated companies were chosen based upon ranges of unadjusted beta and standard error of the regression. The ranges were based upon the average standard deviations of the unadjusted beta and the average standard error of the regression for the proxy group of fifteen utilities selected on the basis of least relative distance.

The fifteen utilities in the proxy group have an average unadjusted beta of 0.53 whose standard deviation is 0.0861 as of September 16, 2004, as shown on page 6 of Aqua Schedule 3.16. The average standard error of the regression is 3.2953 as also shown on Aqua Schedule 3.16, page 8 with a standard deviation of 0.1448 as derived in Note 12, page 8 of Aqua Schedule 3.16. Ranges of

unadjusted betas from 0.27 to 0.79 and of standard errors of the regression from 2.8609 to 3.7297 were used to select the proxy group of seventy-one domestic non-utility companies comparable to the profile of the proxy group of fifteen utilities selected on the basis of least relative distance as can be gleaned from pages 5 and 6 and explained in Note 11 on page 8 of Aqua Schedule 3.16. These ranges are based upon the proxy group's average unadjusted beta of 0.53 and average standard error of the regression of 3.2953 plus or minus three standard deviations of beta (0.0861 x 3 = 0.2583) and standard error of the regressions (0.1448 x 3 = 0.4344). The use of three standard deviations assures capturing 99.73% of the distribution of unadjusted betas and standard errors, assuring comparability.

I believe that this methodology for selecting non-price regulated firms of similar total risk (i.e., non-diversifiable systematic and diversifiable non-systematic risk) is meaningful and effectively responds to the criticisms normally associated with the selection of firms presumed to be comparable in total risk. This is because the selection of non-price regulated companies comparable in total risk is based upon regression analyses of market prices which reflect investors' assessment of all risks, diversifiable and non-diversifiable. Thus, the empirical selection process results in companies comparable in both systematic and unsystematic risks, i.e., total risk.

Once proxy groups of non-price regulated companies are selected, it is then necessary to derive returns on book common equity, net worth or partners' capital for the companies in the groups. I have measured these returns using the rate of return on net worth, common equity or partners' capital reported by Value Line (Standard Edition). It is reasonable to measure these returns over both the most recent historical five-year period as well as those projected over the ensuing five-year period.

Q. What are your conclusions of CEM cost rate?

A. Conclusions of CEM cost rates are 16.5% for the proxy group of six C.A. Turner water companies as shown on page 2 of Aqua Schedule 3.16, 16.1% for the proxy group of three Value Line (Std. Ed.) water companies as shown on page 1, and 15.4% for the proxy group of fifteen utilities selected on the basis of least relative distance as shown on page 6. Note that I have applied a test of significance (Student's t-statistic) to determine whether any of the historical or projected returns are significantly different from their respective means at the 95% confidence level. As a result, the historical and the projected means of several companies have been excluded.

I have also eliminated from the groups of non-price regulated companies, all those rates of return which are greater than 20.0% or less than 200 basis points above the current prospective yield of 6.6% on Moody's A rated public utility bonds (see page 1 of Aqua Schedule 3.14), or 8.6% for reasons discussed previously. Such an elimination results in an arithmetic mean return rate of 14.8% on an historical five-year and 13.6% on a projected five-year basis for the six C.A. Turner water companies, 14.4% on an historical five-year basis and 13.5% on a projected five-year basis for the three Value Line (Std. Ed.) water companies, and 14.1% on an historical five-year basis and 13.5% on a projected five-year basis for the fifteen utilities as shown on pages 2, 4 and 6 of Aqua Schedule 3.16, respectively. I rely upon the midpoint of the arithmetic mean historical five-year and projected five-year rates of return of 14.2, 14.0% and 13.8% as my CEM conclusions for each proxy group, respectively.

IX. RECOMMENDED COMMON EQUITY COST RATE

Q. What is your recommended common equity cost rate?

A. It is 11.30%, based upon a range of common equity cost rates of 11.10% to 11.50% after investment risk adjustment based upon the common equity cost rates resulting from all four cost of common equity models consistent with the EMH which logically mandates the use of multiple cost of common equity models.

In formulating my recommended common equity cost rate of 11.30%, I reviewed the results of the application of four different cost of common equity models, namely, the DCF, RPM, CAPM, and CEM for the three proxy groups. I employ all four cost of common equity models as primary tools in arriving at my recommended common equity cost rate because no single model is so inherently precise that it can be relied upon solely, to the exclusion of other theoretically sound models. As discussed above, all four models are based upon the Efficient Market Hypothesis (EMH), and therefore, have application problems associated with them. The EMH, as also previously discussed, requires the assumption that investors rely upon multiple cost of common equity models. Moreover, as demonstrated in this testimony, the prudence of using multiple cost of common equity models is supported in the financial literature. Therefore, none should be relied upon exclusively to estimate investors' required rate of return on common equity.

In a market environment where market value deviates significantly from book value (lower or higher), sole reliance on the DCF model is problematic for a regulated utility because its application results in an overstatement or understatement, respectively, of investors' required rate of return. Investors expect to achieve their required rate of return based upon dividends received and appreciation in market price. This testimony has shown that market prices

are significantly influenced by factors other than earnings per share (EPS) and dividends per share (DPS). Thus, because it is necessary to use accounting proxies for growth in the DCF model (such as EPS, DPS, or their derivative, internal growth), that model does not reflect the full extent of market price growth expected by investors. Market prices reflect other factors affecting growth not accounted for in the standard regulatory version of the DCF model such as an increase in the market value per share due to expected increases in price/earnings multiples and less obvious factors included in the long-range goals of investors. For these reasons, sole reliance on the DCF model should be avoided. In fact, as discussed in detail above, state commissions in Iowa, Indiana, Hawaii and Pennsylvania, which have previously relied primarily upon the DCF, have explicitly recognized this tendency of the DCF model to understate the common equity cost rate when, as now, market prices significantly exceed book values.

The results of the four cost of common equity models applied to the proxy groups of six C.A. Turner water companies, three Value Line (Std. Ed.) water companies, and fifteen utilities selected on the basis of least relative distance are shown on Aqua Schedule 3.1, page 2 and summarized below:

Table 4

	Proxy Group of Six C.A. Turner Water Cos.	Proxy Group of Three Value Line (Std. Ed.) Water Cos.	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Discounted Cash Flow Model	10.6%	11.0%	10.8%
Risk Premium Model	10.6	10.8	10.9
Capital Asset Pricing Model	10.0	10.3	10.3
Comparable Earnings Model	14.2	14.0	13.8
Indicated Common Equity Cost Rate Before Investment Risk Adjustment	10.80%	11.00%	11.00%
Investment Risk Adjustment	0.30	0.30	0.50
Common Equity Cost Rate After Adjustment for Investment Risk	11.10%	11.30%	11.50%
Recommended Common Equity Cost Rate		11.30%	

Based upon these common equity cost rate results, I conclude that a common equity cost rate of 10.80% is indicated for the proxy group of six C.A. Turner water companies, of 11.00% for the proxy group of three Value Line (Std. Ed.) water companies, and of 11.00% for the proxy group of fifteen utilities selected on the basis of least relative distance based upon the use of multiple common equity cost rate models and before any adjustment for Aqua IL - Woodhaven's greater relative investment risk as shown on Line No. 5, page 2 of Aqua Schedule 3.1.

However, as discussed previously, Aqua IL - Woodhaven has greater investment risk than the average proxy group company because of its small size vis-à-vis each proxy group, whether measured by book capitalization or the market capitalization of common equity (estimated market value for Aqua IL - Woodhaven, whose common stock is not traded) and because of its lower bond rating equivalent. In addition, as indicated in Company Witness Thomas J. Burosky's direct testimony, the Company is expecting to experience a significant

Burosky's direct testimony, the Company is expecting to experience a significant level of capital expenditure requirements in the near future. Therefore, it is necessary to upwardly adjust the 10.80% and 11.00% indicated common equity cost rates based upon each proxy group, respectively.

Based upon Aqua IL - Woodhaven's small relative size, an adjustment to reflect Aqua IL - Woodhaven's smaller relative size of 2.71% (271 basis points) relative to the indicated common equity cost rate of the six C.A. Turner water companies, 3.03% (303 basis points) relative to the indicated common equity cost rate of the three Value Line (Std. Ed.) water companies, and 5.75% (575 basis points) relative to the fifteen utilities are indicated. These adjustments are based upon data contained in Chapter 7 entitled "Firm Size and Return" from Ibbotson Associates' Stocks, Bonds, Bills and Inflation-Valuation Edition 2004 Yearbook. The determinations are based on the size premia for decile portfolios of New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and NASDAQ listed companies for the 1926-2003 period and related data shown on pages 3 through 18 of Aqua Schedule 3.1. The average size premia for the deciles in which the proxy groups fall have been compared to the average size premia for the 9th and 10th/10th decile between/in which Aqua IL - Woodhaven would fall if its stock were traded and sold at the December 7, 2004 average market/book ratio of either 233.6%, 225.7% or 188.7% experienced by each proxy group, respectively. As shown on page 3 of Aqua Schedule 3.1, the size premium spread between Aqua IL - Woodhaven and the six water companies is 2.71%, between Aqua IL, 3.03% between the three Value Line (Std. Ed.) water

companies and Aqua IL and 5.75% between Aqua IL - Woodhaven and the fifteen utilities. Page 4 contains notes relative to page 3. Page 5 contains data in support of page 3 while pages 6 through 18 of Aqua Schedule 1 contain relevant information from the Ibbotson Associates' Valuation Edition 2004 Yearbook discussed previously.

In addition, based upon Aqua IL - Woodhaven's NAIC 2 rating which is the equivalent of Moody's Baa bond rating category as previously discussed, adjustments of 0.28% (28 basis points) relative to the indicated common equity cost rate of the six C. A. Turner water companies, three Value Line (Std. Ed.) water companies, and 0.19% (19 basis points) relative to the fifteen utilities are indicated. These adjustments are based upon the average yield spread between Moody's Baa rated public utility bonds and Moody's A2 and A3 public utility bonds, the average bond ratings of the six water companies (A2), the three Value Line (Std. Ed.) water companies (A2), and fifteen utilities (A3), respectively, as shown on page 2 of Aqua Schedule 3.14. The average yield spread between Moody's Baa rated and A rated public utility bonds is 0.28% (28 basis points), and 0.19%[31] (19 basis points) between Moody's A3 and Baa rated public utility bonds as shown on/or can be gleaned from page 4 of Aqua Schedule 3.14. Thus, to reflect Aqua IL - Woodhaven's lower credit rating, the adjustments to the indicated common equity cost rate of the proxy group of six C. A. Turner water companies and three Value Line (Std. Ed.) water companies is 0.28%, or the average yield spread between Moody's Baa and A rated public utility bonds.

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[31] One-third of the average yield spread of Baa over A rated public utility bonds of 0.28% (1/3 x 0.28% = 0.19%).

Since the average Moody's bond rating of the proxy group of fifteen utilities is A3, the adjustment to its indicated common equity cost rate is equal to one-third the average yield spread between the average yield on Moody's Baa and A rated public utility bonds of 0.28%, or 0.19% (0.19% = 1/3 * 0.28%).

Consequently, total investment risk adjustments of 2.99% (2.99% = 2.71% + 0.28%), 3.31% (3.31% = 3.03% + 0.28%) and 5.94% (5.94% = 5.75% + 0.19%) are indicated for the six water companies, three Value Line (Std. Ed.) water companies, and the fifteen utilities, respectively. However, I will make conservatively reasonable investment risk adjustments of 0.30% (30 basis points) to the indicated common equity cost rates of 10.80% and 11.00% for the six water companies and the three Value Line (Std. Ed.) water companies, respectively, and 0.50% (50 basis points) to the indicated common equity cost rates of 11.00% for the fifteen utilities.

Therefore, as shown on page 2 of Aqua Schedule 3.1 at Line No. 7 and Table 4 above, the indicated common equity cost rates based on each proxy group, including the business adjustment based upon Aqua IL - Woodhaven's small size are 11.10%, 11.30%, and 11.50%. My recommended common equity cost rate of 11.30% is based upon the average of these cost rates. In my opinion, such a cost rate is both reasonable and conservative.

Q. Does that conclude your direct testimony?

A. Yes.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT

AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL QUALIFICATIONS
OF
PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL EXPERIENCE

1996-Present

As a Vice President, I continue to prepare fair rate of return and cost of capital exhibits, as well as submitting testimony on same before state public utility commissions. I continue to provide assistance and support throughout the entire ratemaking litigation process.

As the Publisher of C.A. Turner Utility Reports, I am responsible for the production, publishing, and distribution of the reports. C.A. Turner Utility Reports provides financial data and related ratios for about 200 public utilities, i.e., electric, combination gas and electric, natural gas distribution, natural gas transmission, telephone, and water utilities, on a monthly, quarterly and annual basis. C.A. Turner Utility Reports has about 1,000 subscribers including utilities, many state regulatory commissions, federal agencies, individuals, brokerage firms, attorneys, as well as public and academic libraries. The publication has continuously provided financial statistics on the utility industry since 1930.

As the Publisher of C.A. Turner Utility Reports, I supervise the production, publishing, and distribution of the AGA Rate Service publications under license from the American Gas Association. I am also responsible for maintaining and calculating the performance of the AGA Index, a market capitalization weighted index of the common stocks of the approximately 90 corporate members of the AGA. In addition, I supervise the production of a quarterly survey of investor-owned water company rate case activity on behalf of the National Association of Water Companies.

1994-1996

As an Assistant Vice President, I prepared fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. These supporting exhibits include the determination of an appropriate ratemaking capital structure and the development of embedded cost rates of senior capital. The exhibits also support the determination of a recommended return on common equity through the use of various market models, such as, but not limited to, Discounted Cash Flow analysis, Capital Asset Pricing Model and Risk Premium Methodology, as well as an assessment of the risk characteristics of the client utility. I also assisted in the preparation of responses to any interrogatories received regarding such testimonies filed on behalf of client utilities. Following the filing of fair rate of return testimonies, I assisted in the evaluation of opposition testimony in order to prepare interrogatory questions, areas of cross-examination, and rebuttal testimony. I also evaluated and assisted in the preparation of briefs and exceptions following the hearing process. I have submitted testimony before state public utility commissions regarding appropriate capital structure ratios and fixed capital cost rates.

1990-1994

As a Senior Financial Analyst, I supervised two analysts in the preparation of fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. The team also assisted in the preparation of interrogatory responses.

I evaluated the final orders and decisions of various commissions to determine whether further actions are warranted and to gain insight which may assist in the preparation of future rate of return studies.

I assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

I co-authored an article with Frank J. Hanley entitled "Comparable Earnings: New Life for an Old Precept" which was published in the American Gas Association's Financial Quarterly Review, Summer 1994.

I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts (now the Society of Utility and Regulatory Financial Analysts (SURFA)). This designation is based upon education, experience and the successful completion of a comprehensive examination.

As Administrator of Financial Analysis for C. A. Turner Utility Reports, which reports financial data for over 200 utility companies and has approximately 1,000 subscribers, I oversee the preparation of this monthly publication, as well as the annual publication, Financial Statistics - Public Utilities.

1988-1990

As a Financial Analyst, I assisted in the preparation of fair rate of return studies including capital structure determination, development of senior capital cost rates, as well as the determination of an appropriate rate of return on equity. I also assisted in the preparation of interrogatory responses, interrogatory questions of the opposition, areas of cross-examination and rebuttal testimony. I also assisted in the preparation of the annual publication C.A. Turner Utility Reports - Financial Statistics - Public Utilities.

1973-1975

As a research assistant in the Research Department of the Regional Economics Division of the Federal Reserve Bank of Boston, I was involved in the development and maintenance of econometric models to simulate regional economic conditions in New England in order to study the effects of, among other things, the energy crisis of the early 1970's and property tax revaluations on the economy of New England. I was also involved in the statistical analysis and preparation of articles for the New England Economic Review. Also, I acted as assistant editor for New England Business Indicators.

1972

As a research assistant in the Office of the Assistant Secretary for International Affairs, U.S. Treasury Department, Washington, D.C., I developed and maintained econometric models which simulated the economy of the United States in order to study the results of various alternate foreign trade policies so that national trade policy could be formulated and recommended.

I am also a member of the Society of Utility and Regulatory Financial Analysts (formerly the National Society of Rate of Return Analysts).

Clients Served

I have offered expert testimony before the following commissions:

Arkansas
California
Delaware
Florida
Hawaii
Idaho
Illinois
Indiana
Maine
Maryland
Michigan
Missouri
New Jersey
New York
North Carolina
Ohio
Pennsylvania
South Carolina
Virginia
Washington

I have sponsored testimony on the rate of return and capital structure effects of merger and acquisition issues for:

California-American Water Company
New Jersey-American Water Company

I have sponsored testimony on fair rate of return and related issues for:

Aqua Illinois, Inc.
Audubon Water Company
Carolina Pines Utilities, Inc.
Carolina Water Service, Inc.
Consumers Illinois Water Company
Consumers Maine Water Company
Consumers New Jersey Water Company
Elizabethtown Water Company
Emporium Water Company
GTE Hawaiian Telephone Inc.
Greenridge Utilities, Inc.
Long Neck Water Company
Middlesex Water Company
Missouri-American Water Company
Mt. Holly Water Company
Nero Utility Services, Inc.
New Jersey-American Water Company
Ohio-American Water Company
Pinelands Waste Water Company
Pittsburgh Thermal
Sussex Shores Water Company
Thames Water Americas
Tidewater Utilities, Inc.
Transylvania Utilities, Inc.
Twin Lakes Utilities, Inc.
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Rochelle, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Utilities, Inc. of Florida
Valley Energy, Inc.
Wellsboro Electric Company
Western Utilities, Inc.

I have sponsored testimony on capital structure and senior capital cost rates for the following clients:

Alpena Power Company
Arkansas-Western Gas Company
Associated Natural Gas Company
PG Energy Inc.
United Water Delaware, Inc.
Washington Natural Gas Company

I have assisted in the preparation of rate of return studies on behalf of the following clients:

Algonquin Gas Transmission Company
Arkansas-Louisiana Gas Company
Arkansas Western Gas Company
Artesian Water Company
Associated Natural Gas Company
Atlantic City Electric Company
Bridgeport-Hydraulic Company
Cambridge Electric Light Company
Carolina Power & Light Company
Citizens Gas and Coke Utility
City of Vernon, CA
Columbia Gas/Gulf Transmission Cos.
Commonwealth Electric Company
Commonwealth Telephone Company
Conestoga Telephone & Telegraph Co.
Connecticut Natural Gas Corporation
Consolidated Gas Transmission Company
Consumers Power Company
CWS Systems, Inc.
Delmarva Power & Light Company
East Honolulu Community Services, Inc.
Equitable Gas Company

Rate of Return Study Clients, Continued

Equitrans, Inc.
Florida Power & Light Company
Gary Hobart Water Company
Gasco, Inc.
GTE Arkansas, Inc.
GTE California, Inc.
GTE Florida, Inc.
GTE Hawaiian Telephone
GTE North, Inc.
GTE Northwest, Inc.
GTE Southwest, Inc.
Great Lakes Gas Transmission L.P.
Hawaiian Electric Company
Hawaiian Electric Light Company
IES Utilities Inc.
Illinois Power Company
Interstate Power Company
Iowa Electric Light and Power Company
Iowa Southern Utilities Company
Kentucky-West Virginia Gas Company
Lockhart Power Company
Middlesex Water Company
Milwaukee Metropolitan Sewer District
Mountaineer Gas Company
National Fuel Gas Distribution Corp.
National Fuel Gas Supply Corp.
Newco Waste Systems of NJ, Inc.
New Jersey-American Water Company
New Jersey Natural Gas Company
New York-American Water Company
North Carolina Natural Gas Corp.
Northumbrian Water Company
Ohio-American Water Company
Oklahoma Natural Gas Company
Orange and Rockland Utilities
Paiute Pipeline Company
PECO Energy Company
Penn-York Energy Corporation
Pennsylvania-American Water Co.
PG Energy Inc.
Philadelphia Electric Company
South Carolina Pipeline Company
Southwest Gas Corporation
Stamford Water Company
Tesoro Alaska Petroleum Company
United Telephone of New Jersey
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Jersey, Inc.
United Water New York, Inc.
United Water Pennsylvania, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Vista-United Telecommunications Corp.
Washington Natural Gas Company
Washington Water Power Corporation
Waste Management of New Jersey – Transfer Station A
Wellsboro Electric Company
Western Reserve Telephone Company
Western Utilities, Inc.

EDUCATION:

1973 – Clark University – B.A. – Honors in Economics
1991 – Rutgers University – M.B.A. – High Honors

PROFESSIONAL AFFILIATIONS:

Society of Utility and Regulatory Financial Analysts (serve as Secretary/Treasurer from 2004-2006)
Energy Association of Pennsylvania
National Association of Water Companies – Member of the Finance Committee

AQUA WATER EXHIBIT NO. 3.0

AQUA ILLINOIS, INC. – WOODHAVEN LAKES WATER DIVISION

EXHIBIT

TO ACCOMPANY THE

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS - UTILITY SERVICES

CONCERNING

COMMON EQUITY COST RATE

DECEMBER 2004

Aqua Illinois, Inc. – Woodhaven Lakes Water Division
Table of Contents
to Aqua Water Exhibit No. 3.0
of Pauline M. Ahern

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Summary of Cost of Capital and Fair Rate of Return
Based upon an Average Capital Structure Estimated for the Test Year Ended December 31, 2005

Type of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	47.90 %	7.19 % (1)	3.446 % (1)
Short-Term Debt	0.38	3.07 (1)	0.012 (1)
Total Debt	48.28		3.458
Preferred Stock	0.32	5.48 (1)	0.018 (1)
Common Equity	51.39	11.30 (2)	5.807
Total	99.99 % (3)		9.283 %

Notes:

(1) From Schedule D -1, page 1.

(2) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2 of this Schedule.

(3) Does not add due to rounding.

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Brief Summary of Common Equity Cost Rate

No.	Principal Methods	Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
1.	Discounted Cash Flow Model (DCF) (1)	10.6 %	11.0 %	10.8 %
2.	Risk Premium Model (RPM) (2)	10.6	10.8	10.9
3.	Capital Asset Pricing Model (CAPM) (3)	10.0	10.3	10.3
4.	Comparable Earnings Model (CEM) (4)	14.2	14.0	13.8
5.	Indicated Common Equity Cost Rate before Adjustment for Investment Risk	10.80 %	11.00 %	11.00 %
6.	Investment Risk Adjustment (5)	0.30	0.30	0.50
7.	Indicated Common Equity Cost Rate after Adjustment for Investment Risk	11.10 %	11.30 %	11.50 %
8.	Average		11.30%	
9.	Recommendation		11.30%	

Notes: (1) From Aqua Schedule 3.8.
(2) From page 1 of Aqua Schedule 3.14.
(3) From page Aqua Schedule 3.15.
(4) From page 2, 4 and 6 of Aqua Schedule 3.16.
(5) Investment risk adjustment to reflect Aqua IL's greater investment risk due to its small size and lower credit rating vis-à-vis each proxy group as detailed in Ms. Ahern's direct testimony.

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		1 Total Capitalization (Incl. Short-Term Debt) for the Year 2003 (millions)		2 Market Capitalization on December 7, 2004 (1) (millions)		3 Applicable Decile of the NYSE/AMEX/ NASDAQ	4 Applicable Size Premium		5 Spread from Applicable Size Premium (2)
1.	Aqua Illinois, Inc.	$ 112.954	(3)						
A.	Based upon the Proxy Group of Six C. A. Turner Water Companies			$ 136.749		9 - 10 (4)	4.62%	(5)	
B.	Based upon the Proxy Group of Three Value Line (Standard Edition) Water Companies			$ 132.125		9 - 10 (4)	4.62%	(5)	
C.	Based upon the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			$ 110.465		10 (4)	6.34%	(6)	
2.	Proxy Group of Six C. A. Turner Water Companies	$ 502.690	(7) 4.5 x	$ 605.425	4.4 x	7 - 8 (8)	1.91%	(9)	2.71%
3.	Proxy Group of Three Value Line (Standard Edition) Water Companies	$ 865.130	(10) 7.7	$ 1,054.633	8.0	6 (11)	1.59%	(12)	3.03%
4.	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	$ 6,719.260	(13) 59.5	$ 5,517.271	49.9	2 - 3 (14)	0.59%	(15)	5.75%

Decile	Number of Companies	Recent Total Market Capitalization (millions)	Recent Average Market (millions)
1 - Largest	168	$7,419,638.030	$44,164.512
2	186	1,471,629.952	7,911.989
3	198	746,716.927	3,771.298
4	200	451,145.013	2,255.725
5	221	337,041.577	1,525.075
6	277	290,452.647	1,048.566
7	343	238,327.258	694.832
8	379	171,437.318	452.341
9	613	168,889.652	275.513
10 - Smallest	1724	136,028.242	78.903

See page 4 for notes.

Aqua Illinois, Inc. – Woodhaven Lakes Water Division
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE

Notes:

(1) From page 5 of this Schedule.

(2) Line No. 1 – Line No. 2 and Line No. 1 – Line No. 3 of Columns 3 and 4, respectively. For example, the 2.71% in Column 5, Line No. 2 is derived as follows 2.71% = 4.62% - 1.91%.

(3) From page 1 of Aqua Schedule 3.3.

(4) With an estimated market capitalization of $136.749 million (based upon the proxy group of six C. A. Turner water companies), $132.125 (based upon the proxy group of three Value Line (Standard Edition) water companies), $110.465 (based upon the proxy group of fifteen utilities selected on the basis of least relative distance), Aqua Illinois, Inc. falls between the 9th and 10th deciles or in the 10th decile of the NYSE/AMEX/NASDAQ which have average market capitalizations of $177.208 million and $78.903 as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule

(5) Average size premium applicable to the 9th and 10th deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(6) Size premium applicable to the 10th decile of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(7) From page 1 of Aqua Schedule 3.4.

(8) With an estimated market capitalization of $605.425 million, the proxy group of six C. A. Turner water companies falls between the 7th and 8th deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of $573.587 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule.

(9) Average size premium applicable to the 7th and 8th deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(10) From page 1 of Aqua Schedule 3.5.

(11) With an estimated market capitalization of $1,054.633 million, the proxy group of three Value Line (Standard Edition) water companies falls in the 6th decile of the NYSE/AMEX/NASDAQ which has an average market capitalization of $1,048.566 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule.

(12) Size premium applicable to the 6th decile of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(13) With an estimated market capitalization of $5,517.271 million, the proxy group fifteen utilities selected on the basis of least relative distance falls between the 2nd and 3rd deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of $5,841.644 million as shown in the table on the bottom half of page 3 of this Schedule.

(14) Average size premium applicable to the 2nd and 3rd deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

Source of Information: Ibbotson Associates, Stocks, Bonds, Bills and Inflation – Valuation Edition – 2003 Yearbook, Chicago, IL, 2003

Aqua Illinois, Inc. - Goshen Lakes Water Division
Market Capitalization of Aqua Illinois, Inc.
the Proxy Group of Six C. A. Turner Water Companies and the
the Proxy Group of Three Value Line (Standard (Edition) Water Companies and the
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Company	1 Common Stock Shares Outstanding at September 30, 2004 (millions)	2 Book Value per Share at September 30, 2004 (1)	3 Total Common Equity at September 30, 2004 (millions)	4 Closing Stock Market Price on December 7, 2004	5 Market-to-Book Ratio at December 7, 2004 (2)	6 Market Capitalization on December 7, 2004 (3) (millions)
Aqua Illinois, Inc.	0.750 (4)	$ 78.053	$ 58.540 (5)	NA		
Based upon the Proxy Group of Six C. A. Turner Water Companies					233.6 % (6)	$ 136.749 (7)
Based upon the Proxy Group of Three Value Line (Standard Edition) Water					225.7 % (8)	$ 132.125 (9)
Based upon the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					168.7 % (10)	$ 110.465 (10)
Proxy Group of Six C. A. Turner Water Companies						
American States Water Co.	15.318	$ 18.602	$ 284.303	$ 24.260	146.1 %	$ 371.615
Aqua America, Inc.	93.243	7.306	681.206	23.440	320.8	2,185.616
Artesian Resources Corp.	3.944	13.764	54.245	29.190	212.2	115.125
California Water Service Group	18.345	15.746	288.862	33.070	210.0	606.669
Middlesex Water Company	11.327	8.345	94.529	19.480	233.4	220.850
York Water Company	6.874	6.926	47.601	19.350	279.1	132.874
Average	24.842	$ 11.446	$ 236.791	$ 24.795	233.6 %	$ 605.425
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.	$ 15.318	$ 18.602	$ 284.303	$ 24.260	146.1 %	$ 371.615
Aqua America, Inc.	93.243	7.306	681.206	23.440	320.8	2,185.616
California Water Service Group	18.345	15.746	288.862	33.070	210.0	606.669
	$ 42.302	$ 13.218	$ 408.124	$ 26.923	225.7 %	$ 1,054.633
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance						
AGL Resources, Inc.	66.363	$ 15.661	$ 1,023.000	$ 32.480	207.5 %	$ 2,122.990
American States Water Co.	15.318	18.602	284.303	24.260	146.1	371.615
Aqua America, Inc.	93.243	7.306	681.206	23.440	320.8	2,185.616
California Water Services Group	18.345	15.746	288.862	33.070	210.0	606.669
Cinergy Corp.	180.986	20.890	3,780.939	41.640	199.3	7,536.673
Consolidated Edison, Inc.	241.326	29.479	7,114.000	43.730	148.3	10,553.186
Dominion Resources, Inc.	331.440	31.764	10,528.000	66.500	209.4	22,040.760
Green Mountain Power Corp.	5.930	18.105	107.360	28.600	149.0	169.624
KeySpan Corp.	160.367	23.324	3,740.232	36.280	164.1	6,136.466
Middlesex Water Company	11.327	8.345	94.529	19.480	233.4	220.850
Northwest Natural Gas Co.	27.575	20.032	548.324	32.230	160.9	882.232
Pinnacle West Capital Corp.	91.318	32.696	2,976.763	43.670	133.7	3,976.725
PNM Resources, Inc.	60.422	18.367	1,111.001	25.440	138.4	1,537.136
Southern Company	759.667	13.927	10,581.419	32.720	234.9	24,202.559
Southwest Water Company	17.303	7.307	126.429	12.880	176.3	222.863
Average	157.317	$ 18.631	$ 2,845.080	$ 33.101	188.7 %	$ 5,517.271

NA = Not Available

Notes:
(1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 5 * Column 3.
(4) From Schedule D - 7 , page 2.
(5) From WP-D1, at September 30, 2004.
(6) The market-to-book ratio of Aqua Illinois, Inc. at December 7, 2004 is assumed to be equal to the average market-to-book ratio at December 7, 2004 of the proxy group of six C. A. Turner Water Companies.
(7) Aqua Illinois, Inc.'s common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at December 7, 2004 of the proxy group of six C. A. Turner water companies, 233.6%, and Aqua Illinois' market capitalization at December 7, 2004 would therefore have been $136,749 million. ($136.749 = $58.540 * 233.6%).
(8) The market-to-book ratio of Aqua Illinois, Inc. at December 7, 2004 is assumed to be equal to the average market-to-book ratio at December 7, 2004 of the proxy group of three Value Line (Standard Edition) water companies.
(9) Aqua Illinois, Inc. common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at December 7, 2004 of the proxy group of three Value Line (Standard Edition) water companies, 225.7%, and Aqua Illinois' market capitalization at December 7, 2004 would therefore have been $132.125 million. ($132.125 = $58.540 * 225.7%).
(10) The market-to-book ratio of Aqua Illinois, Inc. at December 7, 2004 is assumed to be equal to the average market-to-book ratio at December 7, 2004 of the proxy group of fifteen utilities selected on the basis of least relative distance.
(11) Aqua Illinois, Inc. common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at December 7, 2004 of the proxy group of fifteen utilities selected on the basis of least relative distance, 188.7%, and Aqua Illinois' market capitalization at December 7, 2004 would therefore have been $110.465 million. ($110.465 = $58.540 * 188.7%).

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Data Base

Stocks, Bonds, Bills and Inflation

SBBI

Valuation Edition
2004 Yearbook

Ibbotson Associates

Stocks, Bonds, Bills and Inflation

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Chapter 7

Firm Size and Return

The Firm Size Phenomenon

One of the most remarkable discoveries of modern finance is that of a relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones. Many studies have looked at the effect of firm size on return.[1] In this chapter, the returns across the entire range of firm size are examined.

Construction of the Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices (CRSP) at the University of Chicago's Graduate School of Business. CRSP has refined the methodology of creating size-based portfolios and has applied this methodology to the entire universe of NYSE/AMEX/NASDAQ-listed securities going back to 1926.

The New York Stock Exchange universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depository Receipts, unit investment trusts, and Americus Trusts. All companies on the NYSE are ranked by the combined market capitalization of their eligible equity securities. The companies are then split into 10 equally populated groups, or deciles. Eligible companies traded on the American Stock Exchange (AMEX) and the Nasdaq National Market (NASDAQ) are then assigned to the appropriate deciles according to their capitalization in relation to the NYSE breakpoints. The portfolios are rebalanced, using closing prices for the last trading day of March, June, September, and December. Securities added during the quarter are assigned to the appropriate portfolio when two consecutive month-end prices are available. If the final NYSE price of a security that becomes delisted is a month-end price, then that month's return is included in the quarterly return of the security's portfolio. When a month-end NYSE price is missing, the month-end value of the security is derived from merger terms, quotations on regional exchanges, and other sources. If a month-end value still is not determined, the last available daily price is used.

Base security returns are monthly holding period returns. All distributions are added to the month-end prices, and appropriate price adjustments are made to account for stock splits and dividends. The return on a portfolio for one month is calculated as the weighted average of the returns for its individual stocks. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

Size of the Deciles

Table 7-1 reveals that the top three deciles of the NYSE/AMEX/NASDAQ account for most of the total market value of its stocks. Approximately two-thirds of the market value is represented by the first decile, which currently consists of 168 stocks, while the smallest decile accounts for just over one percent of the market value. The data in the second column of Table 7-1 are averages across all

1 Rolf W. Banz was the first to document this phenomenon. See Banz, Rolf W. "The Relationship Between Returns and Market Value of Common Stocks," *Journal of Financial Economics*, Vol. 9, 1981, pp. 3–18.

78 years. Of course, the proportion of market value represented by the various deciles varies from year to year.

Columns three and four give recent figures on the number of companies and their market capitalization, presenting a snapshot of the structure of the deciles near the end of 2003.

Table 7-1
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Size and Composition
1926-2003

Decile	Historical Average *Percentage of* Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Recent Percentage of Total Capitalization
1-Largest	63.33%	168	$7,419,638,030	64.91%
2	13.99%	186	1,471,629,952	12.87%
3	7.57%	198	746,716,927	6.53%
4	4.74%	200	451,145,013	3.95%
5	3.24%	221	337,041,577	2.95%
6	2.37%	277	290,452,647	2.54%
7	1.72%	343	238,327,258	2.08%
8	1.27%	379	171,437,318	1.50%
9	0.97%	613	168,889,652	1.48%
10-Smallest	0.80%	1,724	136,028,242	1.19%
Mid-Cap 3-5	15.55%	619	1,534,903,517	13.43%
Low-Cap 6-8	5.36%	999	700,217,223	6.13%
Micro-Cap 9-10	1.77%	2,337	304,917,894	2.67%

Source: © 200403 CRSP® Center for Research in Security Prices. Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. www.crsp.uchicago.edu.

Historical average percentage of total capitalization shows the average, over the last 78 years, of the decile market values as a percentage of the total NYSE/AMEX/NASDAQ calculated each month. Number of companies in deciles, recent market capitalization of deciles, and recent percentage of total capitalization are as of September 30, 2003.

Table 7-2 gives the current breakpoints that define the composition of the NYSE/AMEX/NASDAQ size deciles. The largest company and its market capitalization are presented for each decile. Table 7-3 shows the historical breakpoints for each of the three size groupings presented throughout this chapter. *Mid-cap stocks are defined here as the aggregate of deciles 3–5.* Based on the most recent data (Table 7-2), companies within this mid-cap range have market capitalizations at or below $4,794,027,000 but greater than $1,166,799,000. Low-cap stocks include deciles 6–8 and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below $1,166,799,000 but greater than $330,608,000. Micro-cap stocks include deciles 9–10 and include companies with market capitalizations at or below $330,608,000. The market capitalization of the smallest company included in the micro-capitalization group is currently $332 thousand.

Table 7-2

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization by Decile
September 30, 2003

Decile	Market Capitalization of Largest Company (in thousands)	Company Name
1-Largest	$286,638,305	General Electric Co.
2	11,366,767	Masco Corp.
3	4,794,027	EOG Resources Inc.
4	2,585,984	Toys R Us Inc.
5	1,720,959	International Rectifier Corp.
6	1,166,799	Thor Industries Inc.
7	795,983	Granite Construction Inc.
8	507,820	Steelcase Inc.
9	330,608	Sterling Bancorp
10-Smallest	166,414	Ethyl Corp.

Source: Center for Research in Security Prices, University of Chicago.

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles over 1926–2003 are presented in Table 7-4. Note from this exhibit that both the average return and the total risk, or standard deviation of annual returns, tend to increase as one moves from the largest decile to the smallest. Furthermore, the serial correlations of returns are near zero for all but the smallest two deciles. Serial correlations and their significance will be discussed in detail later in this chapter.

Graph 7-1 depicts the growth of one dollar invested in each of three NYSE/AMEX/NASDAQ groups broken down into mid-cap, low-cap, and micro-cap stocks. The index value of the entire NYSE/AMEX/NASDAQ is also included. All returns presented are value-weighted based on the market capitalizations of the deciles contained in each subgroup. The sheer magnitude of the size effect in some years is noteworthy. While the largest stocks actually declined in 1977, the smallest stocks rose more than 20 percent. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and tenth decile returns was far more substantial. This divergence in the performance of small and large company stocks is a common occurrence.

Table 7-3

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1926 to1965

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1926	$61,490	$14,040	$4,305	$14,100	$4,325	$43
1927	$65,281	$14,746	$4,450	$15,311	$4,496	$72
1928	$81,998	$18,975	$5,074	$19,050	$5,119	$135
1929	$107,085	$24,328	$5,875	$24,480	$5,915	$126
1930	$67,808	$13,050	$3,219	$13,068	$3,264	$30
1931	$42,607	$8,142	$1,905	$8,222	$1,927	$15
1932	$12,431	$2,170	$473	$2,196	$477	$19
1933	$40,298	$7,210	$1,830	$7,280	$1,875	$100
1934	$38,129	$6,669	$1,669	$6,734	$1,673	$68
1935	$37,631	$6,519	$1,350	$6,549	$1,383	$38
1936	$46,920	$11,505	$2,660	$11,526	$2,668	$98
1937	$51,750	$13,601	$3,500	$13,635	$3,539	$68
1938	$36,102	$8,325	$2,125	$8,372	$2,145	$60
1939	$35,784	$7,367	$1,697	$7,389	$1,800	$75
1940	$31,050	$7,990	$1,861	$8,007	$1,872	$51
1941	$31,744	$8,316	$2,086	$8,336	$2,087	$72
1942	$26,135	$6,870	$1,779	$6,875	$1,788	$82
1943	$43,218	$11,475	$3,847	$11,480	$3,903	$395
1944	$46,621	$13,066	$4,800	$13,068	$4,812	$309
1945	$55,268	$17,325	$6,413	$17,575	$6,428	$225
1946	$79,158	$24,192	$10,013	$24,199	$10,051	$829
1947	$57,830	$17,735	$6,373	$17,872	$6,380	$747
1948	$67,238	$19,575	$7,313	$19,651	$7,329	$784
1949	$55,506	$14,549	$5,037	$14,577	$5,108	$379
1950	$65,881	$18,575	$6,176	$18,750	$6,201	$303
1951	$82,517	$22,750	$7,567	$22,860	$7,598	$668
1952	$97,936	$25,452	$8,428	$25,532	$8,480	$480
1953	$98,595	$25,374	$8,156	$25,395	$8,168	$459
1954	$125,634	$29,645	$8,484	$29,707	$8,488	$463
1955	$170,829	$41,445	$12,353	$41,681	$12,366	$553
1956	$183,434	$46,805	$13,481	$46,886	$13,524	$1,122
1957	$192,861	$47,658	$13,844	$48,509	$13,848	$925
1958	$195,083	$46,774	$13,789	$46,871	$13,816	$550
1959	$253,644	$64,221	$19,500	$64,372	$19,548	$1,804
1960	$246,202	$61,485	$19,344	$61,529	$19,385	$831
1961	$296,261	$79,058	$23,562	$79,422	$23,613	$2,455
1962	$250,433	$58,866	$18,952	$59,143	$18,968	$1,018
1963	$308,438	$71,846	$23,819	$71,971	$23,822	$296
1964	$344,033	$79,343	$25,594	$79,508	$25,595	$223
1965	$363,759	$84,479	$28,365	$84,600	$28,375	$250

Source: Center for Research in Security Prices, University of Chicago.

Table 7-3 (continued)

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1966 to 2003

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1966	$399,455	$99,578	$34,884	$99,935	$34,966	$381
1967	$459,170	$117,985	$42,267	$118,329	$42,313	$381
1968	$528,328	$149,261	$60,351	$150,128	$60,397	$592
1969	$517,452	$144,770	$54,273	$145,684	$54,280	$2,119
1970	$380,246	$94,025	$29,910	$94,047	$29,916	$822
1971	$542,517	$145,340	$45,571	$145,673	$45,589	$865
1972	$545,211	$139,647	$46,728	$139,710	$46,757	$1,031
1973	$424,584	$94,809	$29,601	$95,378	$29,606	$561
1974	$344,013	$75,272	$22,475	$75,853	$22,481	$444
1975	$465,763	$96,954	$28,140	$97,266	$28,144	$540
1976	$551,071	$116,184	$31,987	$116,212	$32,002	$564
1977	$573,084	$135,804	$39,192	$137,323	$39,254	$513
1978	$572,967	$159,778	$46,621	$160,524	$46,629	$830
1979	$661,336	$174,480	$49,088	$174,517	$49,172	$948
1980	$754,562	$194,012	$48,671	$194,241	$48,953	$549
1981	$954,665	$259,028	$71,276	$261,059	$71,289	$1,445
1982	$762,028	$205,590	$54,575	$206,536	$54,883	$1,060
1983	$1,200,680	$352,698	$103,443	$352,944	$103,530	$2,025
1984	$1,068,972	$314,650	$90,419	$315,214	$90,659	$2,093
1985	$1,432,342	$367,413	$93,810	$368,249	$94,000	$760
1986	$1,857,621	$444,827	$109,956	$445,648	$109,975	$706
1987	$2,059,143	$467,430	$112,035	$468,948	$112,125	$1,277
1988	$1,957,926	$420,257	$94,268	$421,340	$94,302	$696
1989	$2,147,608	$480,975	$100,285	$483,623	$100,384	$96
1990	$2,164,185	$472,003	$93,627	$474,065	$93,750	$132
1991	$2,129,863	$457,958	$87,588	$458,853	$87,733	$278
1992	$2,428,671	$500,346	$103,352	$501,050	$103,500	$510
1993	$2,711,068	$608,520	$137,945	$608,825	$137,987	$602
1994	$2,497,073	$601,552	$149,435	$602,552	$149,532	$598
1995	$2,793,761	$653,178	$158,011	$654,019	$158,063	$89
1996	$3,150,685	$763,377	$195,188	$763,812	$195,326	$1,043
1997	$3,511,132	$818,299	$230,472	$821,028	$230,554	$480
1998	$4,216,707	$934,264	$253,329	$936,727	$253,336	$1,671
1999	$4,251,741	$875,309	$218,336	$875,582	$218,368	$1,502
2000	$4,143,902	$840,000	$192,598	$840,730	$192,721	$1,462
2001	$5,252,063	$1,114,792	$269,275	$1,115,200	$270,391	$443
2002	$5,012,705	$1,143,845	$314,042	$1,144,452	$314,174	$501
2003	$4,794,027	$1,166,799	$330,608	$1,167,040	$330,797	$332

Source: Center for Research in Security Prices, University of Chicago.

Table 7-4
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Summary Statistics of Annual Returns
1926–2003

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9.6%	11.4%	19.40%	0.09
2	10.8	13.2	22.12	0.03
3	11.2	13.8	24.00	-0.02
4	11.4	14.4	26.31	-0.02
5	11.5	14.9	27.18	-0.02
6	11.7	15.3	28.12	0.03
7	11.5	15.6	30.41	0.01
8	11.7	16.6	33.90	0.04
9	12.1	17.8	37.08	0.06
10-Smallest	13.9	21.7	45.95	0.15
Mid-Cap, 3–5	11.3	14.2	25.10	-0.02
Low-Cap, 6–8	11.7	15.7	29.88	0.03
Micro-Cap, 9–10	12.7	19.0	39.65	0.08
NYSE/AMEX/NASDAQ				
Total Value-Weighted Index	10.1	12.1	20.46	0.03

Source: Center for Research in Security Prices, University of Chicago.

Aspects of the Firm Size Effect

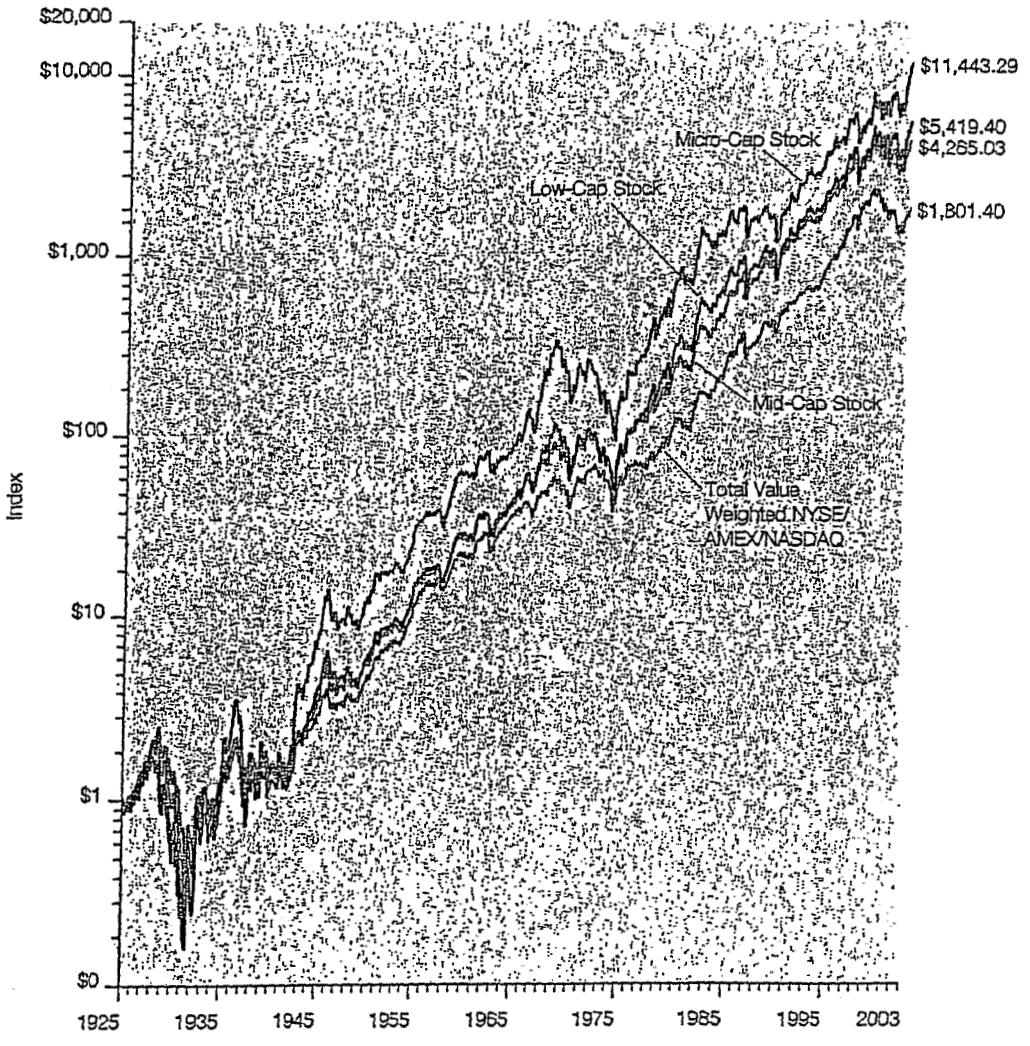
The firm size phenomenon is remarkable in several ways. First, the greater risk of small stocks does not, in the context of the capital asset pricing model (CAPM), fully account for their higher returns over the long term. In the CAPM, only systematic or beta risk is rewarded; small company stocks have had returns in excess of those implied by their betas.

Second, the calendar annual return differences between small and large companies are serially correlated. This suggests that past annual returns may be of some value in predicting future annual returns. Such serial correlation, or autocorrelation, is practically unknown in the market for large stocks and in most other equity markets but is evident in the size premia.

Third, the firm size effect is seasonal. For example, small company stocks outperformed large company stocks in the month of January in a large majority of the years. Such predictability is surprising and suspicious in light of modern capital market theory. These three aspects of the firm size effect—long-term returns in excess of systematic risk, serial correlation, and seasonality—will be analyzed thoroughly in the following sections.

Graph 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro- and Total Capitalization Stocks
1925–2003
Year-end 1925 = $1.00



Source: Center for Research in Security Prices, University of Chicago.

Long-Term Returns in Excess of Systematic Risk

The capital asset pricing model (CAPM) does not fully account for the higher returns of small company stocks. Table 7-5 shows the returns in excess of systematic risk over the past 78 years for each decile of the NYSE/AMEX/NASDAQ. Recall that the CAPM is expressed as follows:

$$k_s = r_f + (\beta_s \times ERP)$$

Table 7-5 uses the CAPM to estimate the return in excess of the riskless rate and compares this estimate to historical performance. According to the CAPM, the expected return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. The return in excess of the riskless rate is estimated in the context of the CAPM by multiplying the equity risk premium by β (beta). The equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (systematic risk).[2] Beta measures the extent to which a security or portfolio is exposed to systematic risk.[3] The beta of each decile indicates the degree to which the decile's return moves with that of the overall market.

A beta greater than one indicates that the security or portfolio has greater systematic risk than the market; according to the CAPM equation, investors are compensated for taking on this additional risk. Yet, Table 7-5 illustrates that the smaller deciles have had returns that are not fully explainable by their higher betas. This return in excess of that predicted by CAPM increases as one moves from the largest companies in decile 1 to the smallest in decile 10. The excess return is especially pronounced for micro-cap stocks (deciles 9–10). This size-related phenomenon has prompted a revision to the CAPM, which includes a size premium. Chapter 4 presents this modified CAPM theory and its application in more detail.

This phenomenon can also be viewed graphically, as depicted in the Graph 7-2. The security market line is based on the pure CAPM without adjustment for the size premium. Based on the risk (or beta) of a security, the expected return lies on the security market line. However, the actual historic returns for the smaller deciles of the NYSE/AMEX/NASDAQ lie above the line, indicating that these deciles have had returns in excess of that which is appropriate for their systematic risk.

2 The equity risk premium is estimated by the 78-year arithmetic mean return on large company stocks, 12.41 percent, less the 78-year arithmetic mean income-return component of 20-year government bonds as the historical riskless rate, in this case 5.23 percent. (It is appropriate, however, to match the maturity, or duration, of the riskless asset with the investment horizon.) See Chapter 5 for more detail on equity risk premium estimation.

3 Historical betas were calculated using a simple regression of the monthly portfolio (decile) total returns in excess of the 30-day U.S. Treasury bill total returns versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2003. See Chapter 6 for more detail on beta estimation.

Table 7-5

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ 1926–2003

Decile	Beta*	Arithmetic Mean Return	Realized Return in Excess of *Riskless Rate***	Estimated Return in Excess of *Riskless Rate*†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.43%	6.21%	6.54%	-0.34%
2	1.04	13.16%	7.94%	7.44%	0.50%
3	1.10	13.78%	8.55%	7.88%	0.67%
4	1.13	14.43%	9.20%	8.09%	1.11%
5	1.16	14.91%	9.68%	8.32%	1.36%
6	1.18	15.32%	10.09%	8.50%	1.59%
7	1.23	15.65%	10.42%	8.85%	1.57%
8	1.28	16.64%	11.42%	9.16%	2.25%
9	1.34	17.76%	12.53%	9.63%	2.90%
10-Smallest	1.41	21.73%	16.50%	10.16%	6.34%
Mid-Cap, 3-5	1.12	14.16%	8.93%	8.02%	0.91%
Low-Cap, 6-8	1.22	15.67%	10.44%	8.74%	1.70%
Micro-Cap, 9-10	1.36	18.98%	13.75%	9.74%	4.01%

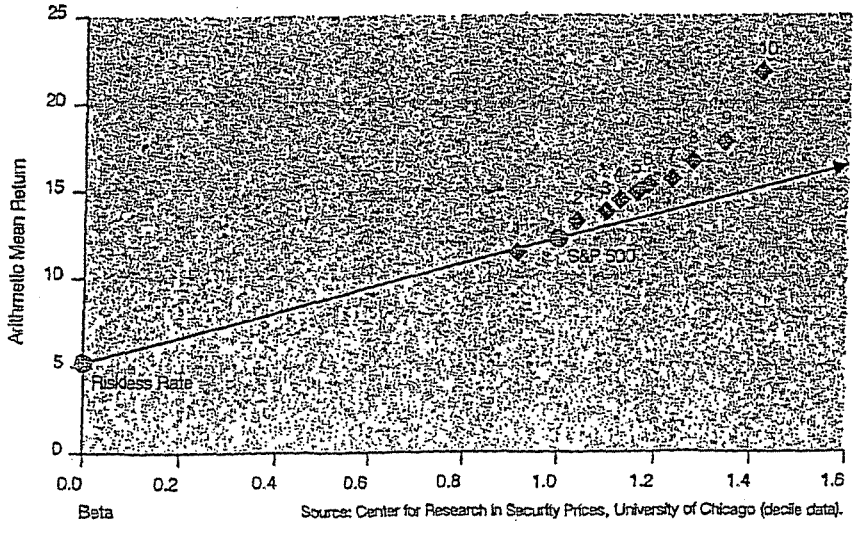
*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2003.

**Historical riskless rate is measured by the 78-year arithmetic mean income return component of 20-year government bonds (5.23 percent).

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.41 percent) minus the arithmetic mean income return component of 20-year government bonds (5.23 percent) from 1926–2003.

Graph 7-2

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ 1926–2003



Source: Center for Research in Security Prices, University of Chicago (decile data).

Further Analysis of the 10th Decile

The size premia presented thus far do a great deal to explain the return due solely to size in publicly traded companies. However, by splitting the 10th decile into two size groupings we can get a closer look at the smallest companies. This magnification of the smallest companies will demonstrate whether the company size to size premia relationship continues to hold true.

As previously discussed, the method for determining the size groupings for size premia analysis was to take the stocks traded on the NYSE and break them up into 10 deciles, after which stocks traded on the AMEX and NASDAQ were allocated into the same size groupings. This same methodology was used to split the 10th decile into two parts: 10a and 10b, with 10b being the smaller of the two. This is equivalent to breaking the stocks down into 20 size groupings, with portfolios 19 and 20 representing 10a and 10b.

Table 7-7 shows that the pattern continues; as companies get smaller their size premium increases. There is a noticeable increase in size premium from 10a to 10b, which can also be demonstrated visually in Graph 7-3. This can be useful in valuing companies that are extremely small. Table 7-6 presents the size, composition, and breakpoints of deciles 10a and 10b. First, the recent number of companies and total decile market capitalization are presented. Then the largest company and its market capitalization are presented.

Breaking the smallest decile down lowers the significance of the results compared to results for the 10th decile taken as a whole, however. The same holds true for comparing the 10th decile with the Micro-Cap aggregation of the 9th and 10th deciles. The more stocks included in a sample the more significance can be placed on the results. While this is not as much of a factor with the recent years of data, these size premia are constructed with data back to 1926. By breaking the 10th decile down into smaller components we have cut the number of stocks included in each grouping. The change over time of the number of stocks included in the 10th decile for the NYSE/AMEX/NASDAQ is presented in Table 7-8. With fewer stocks included in the analysis early on, there is a strong possibility that just a few stocks can dominate the returns for those early years.

While the number of companies included in the 10th decile for the early years of our analysis is low, it is not too low to still draw meaningful results even when broken down into subdivisions 10a and 10b. All things considered, size premia developed for deciles 10a and 10b are significant and can be used in cost of capital analysis. These size premia should greatly enhance the development of cost of capital analysis for very small companies.

Table 7-6

Size-Decile Portfolios 10a and 10b of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization
September 30, 2003

Decile	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Market Capitalization of Largest Company (in thousands)	Company Name
10a	554	$75,931,424	$166,414	Ethyl Corp.
10b	1,158	$54,867,824	$98,928	Mesa Royalty Trust

Note: These numbers may not aggregate to equal decile 10 figures.
Source: Center for Research in Security Prices, University of Chicago.

Table 7-7

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926–2003

	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.43%	6.21%	6.54%	-0.34%
2	1.04	13.16%	7.94%	7.44%	0.50%
3	1.10	13.78%	8.55%	7.88%	0.67%
4	1.13	14.43%	9.20%	8.09%	1.11%
5	1.16	14.91%	9.68%	8.32%	1.36%
6	1.18	15.32%	10.09%	8.50%	1.59%
7	1.23	15.65%	10.42%	8.85%	1.57%
8	1.28	16.64%	11.42%	9.16%	2.25%
9	1.34	17.76%	12.53%	9.63%	2.90%
10a	1.42	19.93%	14.70%	10.20%	4.50%
10b-Smallest	1.40	25.08%	19.85%	10.03%	9.82%
Mid-Cap, 3–5	1.12	14.16%	8.93%	8.02%	0.91%
Low-Cap, 6–8	1.22	15.67%	10.44%	8.74%	1.70%
Micro-Cap, 9-10	1.36	18.98%	13.75%	9.74%	4.01%

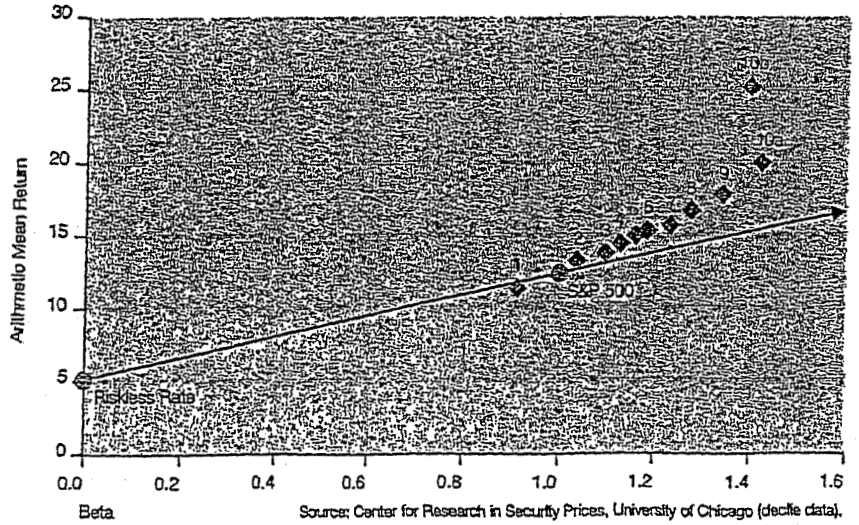
*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2003.

**Historical riskless rate is measured by the 78-year arithmetic mean income return component of 20-year government bonds (5.23 percent).

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.41 percent) minus the arithmetic mean income return component of 20-year government bonds (5.23 percent) from 1926–2003.

Graph 7-3

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926-2003



Source: Center for Research in Security Prices, University of Chicago (decile data).

Table 7-8
Historical Number of Companies for NYSE/AMEX/NASDAQ Decile 10

Sept.	Number of Companies
1926	52*
1930	72
1940	78
1950	100
1960	109
1970	865
1980	685
1990	1,814
2000	1,927
2003	1,724

*The fewest number of companies was 49 in March, 1926

Source: Center for Research in Security Prices, University of Chicago.

Alternative Methods of Calculating the Size Premia

The size premia estimation method presented above makes several assumptions with respect to the market benchmark and the measurement of beta. The impact of these assumptions can best be examined by looking at some alternatives. In this section we will examine the impact on the size premia of using a different market benchmark for estimating the equity risk premia and beta. We will also examine the effect on the size premia study of using sum beta or an annual beta.[4]

Changing the Market Benchmark

In the original size premia study, the S&P 500 is used as the market benchmark in the calculation of the realized historical equity risk premium and of each size group's beta. The NYSE total value-weighted index is a common alternative market benchmark used to calculate beta. Table 7-9 uses this market benchmark in the calculation of beta. In order to isolate the size effect, we require an equity risk premium based on a large company stock benchmark. The NYSE deciles 1–2 large company index offers a mutually exclusive set of portfolios for the analysis of the smaller company groups: mid-cap deciles 3–5, low-cap deciles 6–8, and micro-cap deciles 9–10. The size premia analyses using these benchmarks are summarized in Table 7-9 and depicted graphically in Graph 7-4.

For the entire period analyzed, 1926–2003, the betas obtained using the NYSE total value-weighted index are higher than those obtained using the S&P 500. Since smaller companies had higher betas using the NYSE benchmark, one would expect the size premia to shrink. However, as was illustrated in Chapter 5, the equity risk premium calculated using the NYSE deciles 1–2 benchmark results in a value of 6.40, as opposed to 7.19 when using the S&P 500. The effect of the higher betas and lower equity risk premium cancel each other out, and the resulting size premia in Table 7-9 are slightly higher than those resulting from the original study.

4 Sum beta is the method of beta estimation described in Chapter 6 that was developed to better account for the lagged reaction of small stocks to market movements. The sum beta methodology was developed for the same reason that the size premia were developed; small company betas were too small to account for all of their excess returns.

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Utilities

The utilities rating methodology encompasses two basic components: business risk analysis and financial analysis. Evaluation of industry characteristics, the utility's position within that industry, its regulation, and its management provides the context for assessing a firm's financial condition.

Historical analysis is a tool for identifying strengths and weaknesses, and provides a starting point for evaluating financial condition. Business position assessment is the qualitative measure of a utility's fundamental creditworthiness. It focuses on the forces that will shape the utilities' future.

Utilities credit analysis factors

Business risk	Financial risk
• Markets and service area economy	• Earnings protection
• Competitive position	• Capital structure
• Operations	• Cash flow adequacy
• Regulation	• Financial flexibility/capital attraction
• Management	
• Fuel, power, and water supply	
• Asset concentration	

The credit analysis of utilities is quickly evolving, as utilities are treated less as regulated monopolies and more as entities faced with a host of challengers in a competitive environment. Marketplace dynamics are supplanting the power of regulation, making it critically important to reduce costs and/or market new services in order to thwart competitors' inroads.

Markets and service area economy

Assessing service territory begins with the economic and demographic evaluation of the area in which the utility has its franchise. Strength of long-term demand for the product is examined from a macroeconomic perspective. This enables Standard & Poor's to evaluate the affordability of rates and the staying power of demand.

Standard & Poor's tries to discern any secular consumption trends and, more importantly, the reasons for them. Specific items examined include the size and growth rate of the market, strength of the franchise, historical and projected sales growth, income levels and trends in population, employment, and per capita income. A utility with a healthy economy and customer base—as illustrated by diverse employment opportunities, average or above-average wealth and income statistics, and low unemployment—will have a greater capacity to support its operations.

For electric and gas utilities, distribution by customer class is scrutinized to assess the depth and diversity of the utility's customer mix. For example, heavy industrial concentration is viewed cautiously, since a utility may have significant exposure to cyclical volatility. Alternatively, a large residential component yields a stable and more predictable revenue stream. The largest utility customers are identified to determine their importance to the bottom line and assess the risk of their loss and potential adverse effect on the utility's financial position. Credit concerns arise when individual customers represent more than 5% of revenues. The company or industry may play a significant role in the overall economic base of the service area. Moreover, large customers may turn to cogeneration or alternative power supplies to meet their energy needs, potentially leading to reduced cash flow for the utility (even in cases where a large customer pays discounted rates and is not a profitable account for the utility). Customer concentration is less significant for water and telecommunication utilities.

Competitive position

As competitive pressures have intensified in the utilities industry, Standard & Poor's analysis has deepened to include a more thorough review of competitive position.

Electric utility competition

For electric utilities, competitive factors examined include: percentage of firm wholesale revenues that are most vulnerable to competition; industrial load concentration; exposure of key customers to alternative suppliers; commercial concentrations; rates for various customer classes; rate design and flexibility; production costs, both marginal and fixed; the regional capacity situation; and transmission constraints. A regional focus is evident, but high costs and rates relative to national averages are also of significant concern because of the potential for electricity substitutes over time.

Mounting competition in the electric utility industry derives from excess generating capacity, lower barriers to entering the electric generating business, and marginal costs that are below embedded costs. Standard & Poor's has already witnessed declining prices in wholesale markets, as *de facto* retail competition is already being seen in several parts of the country. Standard & Poor's believes that over the coming years more and more customers will want and demand lower prices. Initial concerns focus on the largest industrial loads, but other customer classes will be increasingly vulnerable. Competition will not necessar-

Capital Structure Based upon Total Capital for
the Proxy Group of Fifteen Utilities
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
AGL Resources Inc.						
Long-Term Debt	45.22 %	48.25 %	53.24 %	47.31 %	52.55 %	49.31 %
Short-Term Debt	13.41	18.30	14.55	9.76	0.11	11.23
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	41.37	33.45	32.21	42.93	47.34	39.46
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Service Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.04 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.13	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Cinergy Corp.						
Long-Term Debt	54.71 %	53.23 %	49.34 %	42.29 %	47.81 %	49.48 %
Short-Term Debt	3.87	7.76	14.08	16.36	8.71	10.16
Preferred Stock	0.69	0.73	0.76	0.91	1.47	0.91
Common Equity	40.73	38.28	35.82	40.44	42.01	39.46
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Consolidated Edison, Inc.						
Long-Term Debt	50.36 %	51.45 %	48.29 %	49.06 %	44.59 %	48.75 %
Short-Term Debt	1.15	1.24	2.83	2.17	4.46	2.37
Preferred Stock	1.85	1.71	2.14	2.13	2.24	2.01
Common Equity	46.64	45.60	46.74	46.64	48.71	46.87
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Dominion						
Long-Term Debt	58.16 %	57.19 %	57.92 %	50.20 %	55.77 %	55.85 %
Short-Term Debt	4.96	4.38	7.37	15.01	6.18	7.58
Preferred Stock	0.88	0.94	1.52	2.36	4.32	2.00
Common Equity	36.00	37.49	33.19	32.43	33.73	34.57
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Green Mountain Power Corp.						
Long-Term Debt	49.38 %	52.99 %	44.17 %	42.31 %	44.05 %	46.58 %
Short-Term Debt	0.25	1.25	0.00	7.43	3.64	2.51
Preferred Stock	0.00	0.04	6.16	6.13	5.90	3.65
Common Equity	50.37	45.72	49.67	44.13	46.41	47.26
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Capital Structure Based upon Total Capital for
the Proxy Group of Fifteen Utilities
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
KeySpan Corp.						
Long-Term Debt	54.23 %	55.64 %	52.71 %	49.74 %	32.78 %	49.02 %
Short-Term Debt	4.66	9.73	11.76	15.11	4.06	9.06
Preferred Stock	5.73	3.34	3.10	2.43	10.27	4.97
Common Equity	35.38	31.29	32.43	32.72	52.89	36.94
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	50.57 %	47.29 %	49.70 %	50.48 %	51.88 %	49.98 %
Short-Term Debt	6.42	9.47	7.43	3.71	1.26	5.66
Preferred Stock	2.09	2.18	2.28	2.49	2.55	2.32
Common Equity	40.92	41.06	40.59	43.32	44.31	42.04
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Northwest Natural Gas Co.						
Long-Term Debt	45.83 %	45.36 %	40.66 %	43.64 %	42.08 %	43.51 %
Short-Term Debt	7.80	6.80	10.53	5.84	9.75	8.14
Preferred Stock	0.00	0.81	3.31	3.61	3.69	2.28
Common Equity	46.37	47.03	45.50	46.91	44.48	46.06
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Pinnacle West Capital Corp.						
Long-Term Debt	53.26 %	53.14 %	49.07 %	49.52 %	50.84 %	51.17 %
Short-Term Debt	1.38	1.72	7.11	1.69	0.84	2.55
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	45.36	45.14	43.82	48.79	48.32	46.29
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
PNM Resources, Inc.						
Long-Term Debt	44.81 %	46.04 %	47.10 %	50.11 %	51.99 %	48.01 %
Short-Term Debt	5.71	7.05	1.73	0.00	0.00	2.90
Preferred Stock	0.58	1.15	1.20	1.31	1.35	1.12
Common Equity	48.90	45.76	49.97	48.58	46.66	47.97
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Southern Company						
Long-Term Debt	54.62 %	55.94 %	51.76 %	44.36 %	50.76 %	51.49 %
Short-Term Debt	2.42	4.43	8.95	7.34	13.56	7.34
Preferred Stock	1.81	1.31	1.73	1.61	3.79	2.05
Common Equity	41.15	38.32	37.56	46.69	31.89	39.12
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Southwest Water Company						
Long-Term Debt	48.50 %	57.07 %	55.97 %	51.45 %	46.72 %	51.94 %
Short-Term Debt	0.00	0.00	0.00	0.00	0.00	0.00
Preferred Stock	0.85	0.74	0.41	0.51	0.68	0.64
Common Equity	50.65	42.19	43.62	48.04	52.60	47.42
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance						
Long-Term Debt	50.95 %	52.07 %	50.31 %	47.19 %	47.49 %	49.60 %
Short-Term Debt	4.63	6.34	7.00	7.18	4.93	6.02
Preferred Stock	1.01	0.92	1.60	1.69	2.55	1.55
Common Equity	43.41	40.67	41.09	43.95	45.04	42.83
Total Capital	100.00 %	100.00 %	100.00 %	100.01 %	100.01 %	100.00 %

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Data Base

Basis for the Selection of the Proxy Group of Fifteen Utilities
Selected on the Basis of Least Relative Distance

	Pre-Tax Interest Coverage (1)	Common Equity Ratio (2)	Fixed Asset Turnover (3)	AFUDC to Net Income (4)	Cash Flow as a % of Permanent Capitalization (5)	Net Cash Flow to Expenditures (6)	Funds Flow Interest Coverage (7)	Operating Earnings Stability (8)	Sum of Distance (9)
AGL Resources, Inc.	3.1031	0.4335	0.2964	0.0000	0.1350	1.0792	4.0169	0.3327	0.6516
American States Water Co.	2.7259	0.4035	0.2666	0.0000	0.0850	0.6607	3.6027	0.3083	0.5854
Aqua America, Inc.	3.5548	0.4732	0.1727	0.0237	0.1036	0.5976	3.8831	0.1697	0.5383
California Water Services Group	2.5291	0.4660	0.2637	0.0798	0.0910	0.3364	3.2914	0.4965	0.9609
Cinergy Corp.	2.9813	0.4399	0.7191	0.0696	0.0999	0.6305	3.6832	0.2083	0.6752
Consolidated Edison, Inc.	3.2101	0.4837	0.5388	0.0291	0.0955	0.6136	3.7480	0.3285	0.5342
Dominion Resources, Inc.	2.3150	0.4012	0.3192	0.0000	0.1091	0.7572	3.8191	0.4965	0.8941
Green Mountain Power Corp.	3.3803	0.5032	0.6559	0.0432	0.1000	1.0580	3.9031	0.2674	0.9806
KeySpan Corp.	2.7780	0.3619	0.5865	0.0000	0.1252	0.7464	4.3305	0.6768	0.8526
Middlesex Water Company	2.9925	0.4448	0.2415	0.0355	0.0705	0.3446	3.3551	0.1993	0.6733
Northwest Natural Gas Co.	2.9412	0.5167	0.4096	0.0238	0.1084	0.8116	3.9490	0.8500	0.8170
Pinnacle West Capital Corp.	2.8294	0.4866	0.3395	0.2100	0.1191	0.6760	4.6289	0.5366	0.8348
PNM Resources, Inc.	3.2034	0.5064	0.5280	0.0514	0.1186	0.9637	4.5583	0.6905	0.9970
Southern Company	3.6706	0.4305	0.2650	0.0581	0.1103	0.6102	4.4376	0.4060	0.8239
Southwest Water Company	2.9842	0.4659	0.5299	0.0811	0.1040	0.6941	4.0751	0.4672	0.5454
Aqua Illinois, Inc.	3.0464	0.5097	0.1582	0.0086	0.1139	0.4744	4.0018	0.1598	0.0000

See page 6 for notes.

Basis for the Selection of the Proxy Group of
Fifteen Utilities Selected on the Basis of Least Relative Distance

Notes:

(1) Pre-tax interest coverage represents the number of times available earnings, before income taxes, excluding all allowance for funds used during construction (AFUDC) cover total interest charges, average for the years 2001, 2002 and 2003.

(2) Common equity ratio is the ratio of total common equity to permanent capitalization (the sum of total long-term debt, current maturities, total preferred stock and total common equity), average for the years 2001, 2002 and 2003.

(3) Fixed asset turnover is the ratio of total operating revenues to gross utility plant, average for the years 2001, 2002 and 2003.

(4) AFUDC to net income is the ratio of total AFUDC to income available for common equity, average for the years 2001, 2002 and 2003.

(5) Cash flow as a percent of permanent capitalization is the ratio of funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) to permanent capitalization (the sum of total long-term debt, current maturities, total preferred stock and total common equity), average for the years 2001, 2002 and 2003.

(6) Net cash flow to capital expenditures is the ratio of gross construction expenditures, excluding all AFUDC, provided by funds from operation (as defined in Note 5), after payment of all cash dividends, average for the years 2001, 2002 and 2003.

(7) Funds flow interest coverage is the ratio of funds from operations (as defined in Note 5) plus total interest charges to total interest charges, average for the years 2001, 2002 and 2003.

(8) Operating earnings stability is an index of the variation in quarterly before-income tax operating income for the years 2001, 2002 and 2003. It is calculated by dividing the standard error of the estimate of a regression about a trend line by the mean. It is analogous to the coefficient of variation.

(9) Sum of distance is calculated as the squared distances between the eight operating / financial ratios of each firm and Aqua Illinois, Inc., summing the squared distances, and then calculating the square root of the summation.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database
Aqua Illinois, Inc. Annual Reports to the Illinois Commerce Commission and quarterly income statements

Aqua Exhibit No. 3.0
Aqua Schedule 3.7

Aqua Illinois, Inc. - Oak Run Division
Hypothetical Example of the Inadequacy of
A DCF Return Rate Related to Book Value
When Market Value is Greater / Less than Book Value

Line No.		1 Market Value	2 Book Value with Market to Book Ratio of 180%	3 Book Value with Market to Book Ratio of 80%
1.	Per Share	$ 24.000	$ 13.33	$ 30.00
2.	DCF Cost Rate (1)	10.00%	10.00%	10.00%
3.	Return in Dollars	$ 2.400	$ 1.333	$ 3.000
4.	Dividends (2)	$ 0.960	$ 0.960	$ 0.960
5.	Growth in Dollars	$ 1.440	$ 0.373	$ 2.040
6.	Return on Market Value	10.00%	5.55% (3)	12.50% (4)
7.	Rate of Growth on Market Value	6.00% (5)	1.55% (6)	8.50% (7)

Notes:
(1) Comprised of 4.0% dividend yield and 6.0%% growth.
(2) $24.00 * 4.0% yield = $0.960.
(3) $1.333 / $24.00 market value = 5.55%.
(4) $3.000 / $24.00 market value = 12.50%.
(5) Expected rate of growth per market based DCF model.
(6) Actual rate of growth when DCF cost rate is applied to book value ($1.333 possible earnings - $0.960 dividends = $0.373 for growth / $24.00 market value = 1.55%).
(7) Actual rate of growth when DCF cost rate is applied to book value ($3.000 possible earnings - $0.960 dividends = $2.040 for growth / $24.00 market value = 8.50%).

Aqua Exhibit No. 3.0
Aqua Schedule 3.8

Aqua Illinois, Inc. - Oak Run Division
Indicated Common Equity Cost Rate
Through Use of the Discounted Cash Flow Model
Summary of Conclusion

	Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
1. Single Stage Discounted Cash Flow Model (1)	10.5 %	10.9 %	10.7 %
2. Quarterly Version of the Discounted Cash Flow Model (2)	10.7	11.1	10.8
3. Conclusion	10.6 %	11.0 %	10.8 %

Notes: (1) From page 2 of Aqua Schedule 3.9.

(2) From page 2 of Aqua Schedule 3.10.

Aqua Illinois, Inc. - Oak Run Division
Indicated Common equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Based upon Historical and Projected Growth in DPS, EPS, and BR+SV

	1	2	3	4	5
	Average Dividend Yield (1)	Dividend Growth Component (2)	Adjusted Dividend Yield (3)	Growth Rate (4)	Indicated Common Equity Cost Rate (5)
Proxy Group of Six C. A. Turner Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	4.7 %	8.5 %
Aqua America, Inc.	2.3	0.1	2.4	10.0	12.4
Artesian Resources Corp.	3.0	0.1	3.1	6.3	9.4
California Water Services Group	3.5	0.1	3.6	5.3	8.9
Middlesex Water Company	3.5	0.1	3.6	3.1	6.7
York Water Company	3.2	0.1	3.3	4.7	8.0
Average	3.2 %	0.1 %	3.3 %	5.7 %	10.2 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	4.7 %	8.5 %
Aqua America, Inc.	2.3	0.1	2.4	10.0	12.4
California Water Services Group	3.5	0.1	3.6	5.3	8.9
Average	3.2 %	0.1 %	3.3 %	6.7 %	10.7 % (6)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					
AGL Resources, Inc.	3.7 %	0.1 %	3.8 %	3.8 %	7.6 %
American States Water Co.	3.7	0.1	3.8	4.7	8.5
Aqua America, Inc.	2.3	0.1	2.4	9.6	12.0
California Water Services Group	3.5	0.1	3.6	5.3	8.9
Cinergy Corp.	4.6	0.1	4.7	3.0	7.7
Consolidated Edison, Inc.	5.2	0.0	5.2	1.9	7.1
Dominion Resources, Inc.	4.1	0.1	4.2	6.6	10.8
Green Mountain Power Corp.	3.3	0.1	3.4	8.6	12.0
KeySpan Corp.	4.6	0.1	4.7	4.2	8.9
Middlesex Water Company	3.5	0.1	3.6	3.1	6.7
Northwest Natural Gas Co.	4.0	0.1	4.1	3.3	7.4
Pinnacle West Capital Corp.	4.4	0.1	4.5	4.4	8.9
PNM Resources, Inc.	2.6	0.1	2.7	5.6	8.3
Southern Company	4.5	0.1	4.6	3.4	8.0
Southwest Water Company	1.8	0.1	1.7	12.8	14.5
Average	3.7 %	0.1 %	3.8 %	5.4 %	10.9 % (6)

Notes: (1) From Aqua Schedule 3.11.

(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 1 of Aqua Schedule 3.13) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 3.7% x (1/2 x 4.7%) = 0.1%.

(3) Column 1 + Column 2.

(4) From page 1 of Aqua Schedule 3.13.

(5) Column 3 + Column 4.

(6) Includes only those indicated common equity cost rates which are greater than 8.6%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.6% (from page 1 of Aqua Schedule 3.14.)

Aqua Illinois, Inc. - Oak Run Division
Indicated Common equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Based upon Projected Growth in EPS

	1 Average Dividend Yield (1)	2 Dividend Growth Component (2)	3 Adjusted Dividend Yield (3)	4 Growth Rate (4)	5 Indicated Common Equity Cost Rate (5)
Proxy Group of Six C. A. Turner Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	6.3 %	10.1 %
Aqua America, Inc.	2.3	0.1	2.4	9.3	11.7
Artesian Resources Corp.	3.0	0.1	3.1	8.5	11.6
California Water Services Group	3.5	0.1	3.6	8.0	11.6
Middlesex Water Company	3.5	0.1	3.6	6.0	9.6
York Water Company	3.2	0.1	3.3	7.0	10.3
Average	3.2 %	0.1 %	3.3 %	7.5 %	10.8 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	6.3 %	10.1 %
Aqua America, Inc.	2.3	0.1	2.4	9.3	11.7
California Water Services Group	3.5	0.1	3.6	8.0	11.6
Average	3.2 %	0.1 %	3.3 %	7.9 %	11.1 % (6)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					
AGL Resources, Inc.	3.7 %	0.1 %	3.8 %	5.3 %	9.1 %
American States Water Co.	3.7	0.1	3.8	6.3	10.1
Aqua America, Inc.	2.3	0.1	2.4	9.3	11.7
California Water Services Group	3.5	0.1	3.6	8.0	11.6
Cinergy Corp.	4.6	0.1	4.7	3.9	8.6
Consolidated Edison, Inc.	5.2	0.1	5.3	2.3	7.6
Dominion Resources, Inc.	4.1	0.1	4.2	6.8	11.0
Green Mountain Power Corp.	3.3	0.1	3.4	3.5	6.9
KeySpan Corp.	4.6	0.1	4.7	5.6	10.3
Middlesex Water Company	3.5	0.1	3.6	6.0	9.6
Northwest Natural Gas Co.	4.0	0.1	4.1	4.9	9.0
Pinnacle West Capital Corp.	4.4	0.1	4.5	3.2	7.7
PNM Resources, Inc.	2.8	0.1	2.7	5.0	7.7
Southern Company	4.5	0.1	4.6	4.8	9.4
Southwest Water Company	1.6	0.1	1.7	10.0	11.7
Average	3.7	0.1	3.8	5.7	10.4 % (6)
Conclusion					
Proxy Group of Six C. A. Turner Water Companies					10.5 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					10.9 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					10.7 %

Notes: (1) From Aqua Schedule 3.11.

(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 1 of Aqua Schedule 3.13) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 3.7% x (1/2 x 6.3%) = 0.1%.

(3) Column 1 + Column 2.

(4) From page 1 of Aqua Schedule 3.13.

(5) Column 3 + Column 4.

(6) Includes only those indicated common equity cost rates which are greater than 8.6%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.6% (from page 1 of Aqua Schedule 3.14.)

Aqua Illinois, Inc. - Oak Run Division
Indicated Common Equity Cost Rate Through Use of the
Quarterly Version of the Discounted Cash Flow Model (1)
for the Proxy Group of Six C. A. Turner Water Companies, the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	Based upon Historical and Projected Growth in DPS, EPS, and BR+SV (2)		
	Based upon Spot Closing Market Prices at December 7, 2004	Based Upon an Average of Closing Market Prices for Last 3 Months (3)	Average
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	8.5 %	8.4 %	8.5 %
Aqua America, Inc.	12.3	12.4	12.4
Artesian Resources Corp.	9.3	9.3	9.3
California Water Service Group	9.2	9.4	9.3
Middlesex Water Company	6.6	6.8	6.7
York Water Company	7.9	8.3	8.1
Average			10.3 % (5)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	8.5 %	8.4 %	8.5 %
Aqua America, Inc.	12.3	12.4	12.4
California Water Service Group	9.2	9.4	9.3
Average			10.9 % (5)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			
AGL Resources, Inc.	7.5 %	7.6 %	7.6 %
American States Water Co.	8.5	8.4	8.5
Aqua America, Inc.	12.3	12.4	12.4
California Water Services Group	9.2	9.4	9.3
Cinergy Corp.	7.9	8.1	8.0
Consolidated Edison, Inc.	7.3	7.5	7.4
Dominion Resources, Inc.	11.0	10.9	11.0
Green Mountain Power Corp.	12.3	12.6	12.5
KeySpan Corp.	9.0	8.9	9.0
Middlesex Water Company	6.6	6.8	6.7
Northwest Natural Gas Co.	7.4	7.4	7.4
Pinnacle West Capital Corp.	9.0	9.0	9.0
PNM Resources, Inc.	8.3	8.5	8.4
Southern Company	8.1	8.1	8.1
Southwest Water Company	14.8	14.6	14.7
Average			11.1 % (5)

See page 2 for notes.

Aqua Illinois, Inc. - Oak Run Division
Indicated Common Equity Cost Rate Through Use of the
Quarterly Version of the Discounted Cash Flow Model (1)
for the Proxy Group of Six C. A. Turner Water Companies, the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	Based upon Projected Growth in EPS (4)		
	Based upon Spot Closing Market Prices at December 7, 2004	Based Upon an Average of Closing Market Prices for Last 3 Months (3)	Average
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	10.2 %	10.0 %	10.1 %
Aqua America, Inc.	11.6	11.7	11.7
Artesian Resources Corp.	11.5	11.7	11.6
California Water Service Group	12.1	12.3	12.2
Middlesex Water Company	9.6	9.8	9.7
York Water Company	10.4	10.6	10.5
Average			11.0 % (5)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	10.2 %	10.0 %	10.1 %
Aqua America, Inc.	11.6	11.7	11.7
California Water Service Group	12.1	12.3	12.2
Average			11.3 % (5)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			
AGL Resources, Inc.	9.3 %	9.2 %	9.3 %
American States Water Co.	10.2	10.0	10.1
Aqua America, Inc.	11.6	11.7	11.7
California Water Services Group	12.1	12.3	12.2
Cinergy Corp.	8.9	9.1	9.0
Consolidated Edison, Inc.	7.8	7.9	7.9
Dominion Resources, Inc.	11.0	11.1	11.1
Green Mountain Power Corp.	7.1	7.1	7.1
KeySpan Corp.	10.4	10.3	10.4
Middlesex Water Company	9.6	9.8	9.7
Northwest Natural Gas Co.	9.1	9.0	9.1
Pinnacle West Capital Corp.	7.7	7.8	7.8
PNM Resources, Inc.	7.7	7.8	7.8
Southern Company	9.4	9.6	9.5
Southwest Water Company	11.8	11.9	11.9
Average			10.4 % (5)
Conclusion			
Proxy Group of Six C. A. Turner Water Companies			10.7 %
Proxy Group of Three Value Line (Standard Edition) Water Companies			11.1 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			10.8 %

Notes: (1) See Equation (7-2) on page 5 of this Schedule.

(2) Calculated using historical and projected growth in DPS, EPS, and BR+SV for each company calculated from the individual growth rates shown on page 1 of Aqua Schedule 3.13 in a manner identical to the conclusion of growth for each proxy group shown in column 9 on page 1 of Aqua Schedule 3.13.

(3) The average 3-month closing market price is based upon the market price on the last trading day of each of the three months ended November 30, 2004.

(4) Calculated using the average projected five year growth rate in EPS from column 7 on page 1 of Aqua Schedule 3.13.

(5) Includes only those indicated common equity cost rates which are greater than 8.6%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.6% (from page 1 of Aqua Schedule 3.14.)

REGULATORY FINANCE:

UTILITIES' COST OF CAPITAL

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in collaboration with

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1994
PUBLIC UTILITIES REPORTS, INC.
Arlington, Virginia

Chapter 7
Alternative DCF Models

7.1 The Quarterly DCF Model

The standard annual form of the DCF model:

$$K = D_1/P_0 + g$$

assumes an annual dividend payment, a yearly increase in dividends starting exactly one year from the present, a constant rate of dividend growth, and a stock price P_0 that is determined on a dividend payment date. But because dividends are normally paid quarterly, the investor's required return should be assessed with a DCF model that recognizes quarterly payments.

It is a rudimentary tenet of security valuation theory discussed in Chapter 4 that when determining investor return requirements, the cost of equity is the discount rate that equates the present value of future cash receipts to the observed market price. Clearly, given that dividends are paid quarterly and given that the observed stock price reflects the quarterly nature of dividend payments, the market required return must recognize quarterly compounding, for the investor receives dividend checks and reinvests the proceeds on a quarterly schedule. Perforce, a stock that pays 4 quarterly dividends of one dollar commands a higher price than a stock that pays a 4-dollar dividend a year hence. Since investors are aware of the quarterly timing of dividend payments and since the stock price already fully reflects the quarterly payment of dividends, it is essential that the DCF model used to estimate equity costs also reflect the actual timing of quarterly dividends.

The traditional annual DCF model is based on the limiting assumptions that dividends are paid annually, and that dividends increase once a year starting exactly one year from the present. These assumptions are unnecessarily restrictive. Most companies, including utilities, in fact pay dividends on a quarterly basis. The quarterly DCF model discussed in subsequent sections of this chapter rests on the exact same assumptions as the annual DCF model except that the DCF model is refined to reflect the actual corporate practice of paying dividends quarterly rather than once a year. The quarterly version of the DCF model also assumes that the dividend rate is raised once a year instead of every quarter.

As both a practical and theoretical matter, stock yield calculations must be adjusted for the receipt of cash flows on a quarterly basis. The annual DCF

model inherently produces incorrect results because it assumes that all cash flows received by investors are paid annually. By analogy, a bank rate on deposits that does not take into consideration the timing of the interest payments understates the true yield if the customer receives the interest payments more than once a year. The actual yield will exceed the stated nominal rate. Bond yield calculations are also routinely adjusted for the receipts of semi-annual interest payments. What is true for bank deposits and for bonds is equally germane for common stocks.

Most, if not all, finance textbooks discuss frequency of compounding in computing the yield on a financial security. The handbooks that accompany popular financial calculators used almost universally by the financial community contain abundant directions with respect to frequency of compounding.

Appendix 7-A formally derives the quarterly DCF model, which has the following form:

$$K = \frac{[D_1 (1+K)^{3/4} + D_2 (1+K)^{1/2} + D_3 (1+K)^{1/4} + D_4]}{P_0} + g \qquad (7\text{-}1)$$

where D_1, D_2, D_3, D_4 = quarterly dividends expected over the coming year

g = expected growth in dividends

P_0 = current stock price

K = required return on equity

Equation 7-1 must be solved by iteration because K appears on both sides of the equation. Note that an even more general form of the quarterly DCF model can be derived for the case where the stock price is not determined on a dividend payment date. If we let f_1, f_2, f_3, and f_4 denote the fraction of the year before the quarterly dividends are received, Equation 7-1 becomes:

$$K = \frac{[D_1 (1+K)^{1-f_1} + D_2 (1+K)^{1-f_2} + D_3 (1+K)^{1-f_3} + D_4 \ ^{1-f_4}]}{P_0} + g \qquad (7\text{-}2)$$

In the special case where the stock price happens to be determined on a dividend payment date, f_1, f_2, f_3, and f_4 are equal to 0.25, 0.50, 0.75 and 1.00 and Equation 7-2 reduces back to Equation 7-1.

The two-stage non-constant growth DCF model described in Chapter 4 has a quarterly counterpart:

$$P_0 = \frac{D_1(1+g)}{(1+K)^{0.25}} + \frac{D_2(1+g)}{(1+K)^{0.50}} + \frac{D_3(1+g)}{(1+K)^{0.75}} + \frac{D_3(1+g)}{(1+K)^{1.00}} + \frac{D_1(1+g)^2}{(1+K)^{1.25}} + \frac{D_2(1+g)^2}{(1+K)^{1.50}} + \frac{D_3(1+g)^2}{(1+K)^{1.75}} + \frac{D_3(1+g)^2}{(1+K)^{2.00}} + \frac{P_2}{(1+K)^{2.00}} \quad (7\text{-}3)$$

The symbol g represents the first stage growth rate while P_2 represents the stock price in period 2 that is obtained by applying the quarterly DCF model using the second-stage growth rate.

Intuitively, the quarterly form of the DCF model described by Equation 7-1 resembles the standard annual form, but with a slightly modified dividend yield component. Letting $D_1' = D_1(1+K)^{3/4} + D_2(1+K)^{1/2} + D_3(1+K)^{1/4} + D_4$ in Equation 7-1, the quarterly DCF equation becomes:

$$K = D_1'/P_0 + g \quad (7\text{-}4)$$

which is very similar to the annual version. One can think of the D_1' term as an augmented D_1 term that simply captures the added time value of money associated with investors receiving successive quarterly dividends and reinvesting them over the remainder of the year at K%. That is to say, during the course of one year, the investor has the value of the first quarter's dividend for 3/4 of the year; the second quarter dividend for 1/2 of the year; the third quarter dividend for 1/4 of the year, and the fourth quarter dividend is received at the end of the year. The following illustration shows how to implement the quarterly DCF model and estimate the investor's required market return.

EXAMPLE 7-1

The common stock of Consolidated Natural Gas (CNG) is trading at $52.13. The dividend is expected to increase annually at a constant rate of 8.8%. The current quarterly dividend rate is $0.48 and has been in effect for two quarters. Thus an investor buying CNG stock expects to receive, in the next year, two more dividends at the existing rate of $0.48 and two dividends at the new rate of $0.48(1 + g). The cost of equity capital is obtained by solving iteratively the quarterly version of the DCF model in Equation 7-1 by means of a computer spreadsheet. To solve that equation, the following input data for CNG

$$D_1 = \$0.48$$

$$D_2 = \$0.48$$

$$D_3 = \$0.48(1 + .0880) = \$0.52$$

$$D_4 = \$0.48(1 + .0880) = \$0.52$$

$$P_0 = \$52.13$$

$$g^{Qtr} = 8.80\%$$

are substituted into Equation 7-1 as follows:

$$K_e = \frac{\$0.48/(1+K_e)^{1/4} + \$0.48/(1+K_e)^{2/4} + \$0.52/(1+K_e)^{3/4} + \$0.52}{\$52.13} + .0880$$

The equation is solved iteratively by successive approximations for K_e, the cost of equity. Here, $K_e = 12.82\%$.

Note that the annual DCF model produces an estimate of 12.64%, which is less than the 12.82% estimate derived from the quarterly DCF model.

$$K_e = D_1/P_0 + g = \$2.00/\$52.13 + .088 = 12.64\%$$

The difference is attributable to the time value of money associated with receiving quarterly dividends. The annual version of the DCF model typically understates the cost of equity by approximately 30-40 basis points, depending on the magnitude of the dividend yield component.

The cost of equity capital estimate of 12.82% should be translated into a fair return on equity by allowing for a 5% flotation costs factor. This is accomplished by dividing the dividend yield component of the cost of equity figure by 0.95 to produce a fair DCF rate of return on equity of 13.03%.

7.2 Other Alternative DCF Models

Other alternative functional forms of the DCF model are available but are largely unrealistic and/or theoretically incorrect. The continuous compounding DCF model, for example, is developed assuming that dividends are paid continuously rather than at discrete time intervals.[1] Clearly, this model does not reflect reality, any more than does the annual DCF model, which assumes that dividends are paid once a year at the end of the year. The continuous DCF model has the following form:

$$K_c = D_0/P_0 + g \qquad (7\text{-}5)$$

where K_c = investor's expected return from the continuous DCF model

D_0 = annual per share dividend at time 0, i.e., current dividend

Another DCF model sometimes used by analysts, notably by the Federal Energy Regulatory Commission in its determination of the electric utility industry's generic rate of return on equity before 1993, lies halfway between the continuous and annual forms of the DCF model:

$$K_{ad\ hoc} = D_0(1 + 0.5G)/P_0 + g \qquad (7\text{-}6)$$

where $K_{ad\ hoc}$ = investor's expected return from the ad hoc DCF model

This "ad hoc" DCF model is based on the arbitrary assumption that the firm is halfway into its quarterly dividend cycle and assigns half a year's growth to the dividend. Of course, the model does not reflect reality and is arbitrary in nature. Only the quarterly compounding DCF model reflects reality, is theoretically correct, and is computationally tractable.

1 The effective return under continuous compounding is computed with the following formula:

$$K_c = \frac{D_0[K_c/\ln(1 + k_e)] + g}{P_0}$$

Aqua Exhibit No. 3.0
Aqua Schedule 3.11

Aqua Illinois, Inc. - Oak Run Division
Derivation of Dividend Yield for Use in the
Discounted Cash Flow Model

	Dividend Yield		
	Spot (12/07/04) (1)	Average of Last 3 Months (2)	Average Dividend Yield (3)
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	3.7 %	3.6 %	3.7 %
Aqua America, Inc.	2.2	2.3	2.3
Artesian Resources Corp.	2.9	3.0	3.0
California Water Services Group	3.4	3.6	3.5
Middlesex Water Company	3.4	3.6	3.5
York Water Company	3.2	3.2	3.2
Average	3.1 %	3.2 %	3.2 %
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	3.7	3.6 %	3.7 %
Aqua America, Inc.	2.2	2.3	2.3
California Water Services Group	3.4	3.6	3.5
Average	3.1 %	3.2 %	3.2 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least			
AGL Resources, Inc.	3.6	3.7 %	3.7 %
American States Water Co.	3.7	3.6	3.7
Aqua America, Inc.	2.2	2.3	2.3
California Water Services Group	3.4	3.6	3.5
Cinergy Corp.	4.5	4.7	4.6
Consolidated Edison, Inc.	5.2	5.2	5.2
Dominion Resources, Inc.	4.0	4.1	4.1
Green Mountain Power Corp.	3.3	3.3	3.3
KeySpan Corp.	4.6	4.5	4.6
Middlesex Water Company	3.4	3.6	3.5
Northwest Natural Gas Co.	4.0	4.0	4.0
Pinnacle West Capital Corp.	4.4	4.4	4.4
PNM Resources, Inc.	2.5	2.7	2.6
Southern Company	4.4	4.6	4.5
Southwest Water Company	1.6	1.6	1.6
Average	3.7 %	3.7 %	3.7 %

Notes:
(1) The spot dividend yield is the current annualized dividend per share divided by the spot market price on 12/07/04.
(2) The average 3-month dividend yield was computed by relating the indicated annualized dividend rate and market price on the last trading day of each of the three months ended November 30, 2004.
(3) Equal weight has been given to the 3-month average and spot dividend yield. This provides recognition of current conditions, but does not place undue emphasis thereon.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus
Research Insight Database
finance.yahoo.com

Aqua Illinois, Inc. - Oak Run Division
Current Institutional Holdings (1) and Individual Holdings (2) for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	1 December 2004 Percentage of Institutional Holdings (1)	2 December 2004 Percentage of Individual Holdings (2)
Proxy Group of Six C. A. Turner Water Companies		
American States Water Co.	39.4 %	60.6 %
Aqua America	28.5	71.5
Artesian Resources Corp.	10.0	90.0
California Water Service Group	22.1	77.9
Middlesex Water Company	17.3	82.7
York Water Company	6.2	93.8
Average	20.6 %	79.4 %
Proxy Group of Three Value Line Water Companies		
American States Water Co.	39.4 %	60.6 %
Aqua America	28.5	71.5
California Water Service Group	22.1	77.9
Average	30.0 %	70.0 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance		
AGL Resources, Inc.	55.2 %	44.8 %
American States Water Co.	39.4	60.6
Aqua America, Inc.	28.5	71.5
California Water Services Group	22.1	77.9
Cinergy Corp.	63.6	36.4
Consolidated Edison, Inc.	43.0	57.0
Dominion Resources, Inc.	61.9	38.1
Green Mountain Power Corp.	41.7	58.3
KeySpan Corp.	49.3	50.7
Middlesex Water Company	17.3	82.7
Northwest Natural Gas Co.	47.1	52.9
Pinnacle West Capital Corp.	73.2	26.8
PNM Resources, Inc.	90.8	9.2
Southern Company	39.9	60.1
Southwest Water Company	26.1	73.9
Average	46.6 %	53.4 %

Notes: (1) The percentage of institutional holdings is calculated by dividing the number of shares held by institutions by the number of shares outstanding.

(2) (1 - column 1).

Source of Information: yahoo.investor.reuters.com

Aqua Ilinois, Inc. - Oak Run Division
Historical and Projected Growth

	1	2	3	4	5	6		7	8	9	10	11	12	13
	Value Line Historical Five Year Growth Rate (1)		Five Year Historical BR + SV (2)	Value Line Projected 2001-03 to 2007-09 Growth Rate (1)		ThomsonFN / First Call Mean Consensus Projected Five Year Growth Rate		Average Projected Five Year Growth Rate in EPS (3)	Projected Five Year BR + SV (4)	Range of Growth Rates			Average of all Growth Rates	Average of Midpoint and Average of all Growth Rates (9)
	DPS	EPS		DPS	EPS	EPS	No. of Est.			Low	High	Midpoint		
Proxy Group of Six C. A. Turner Water Companies														
American States Water Co.	1.0 %	1.5 %	4.4 %	1.5 %	6.5 %	3.0 %	[1]	5.3 %	7.1 %	1.0 %	9.5 %	5.3 %	4.0 %	4.7 %
Aqua America, Inc.	6.0	9.5	15.6	7.0	9.0	9.6	[5]	9.3	7.5	6.0	15.6	10.8	9.1	10.0
Artesian Resources Corp.	4.4 (5)	5.7 (5)	5.4	NA	NA	6.5	[2]	6.5	NA	4.4	8.5	6.5	6.0	6.3
California Water Services Group	1.0	(6.5)	4.9	1.0	10.0	6.0	[3]	8.0	7.2	1.0 (8)	10.0	5.5	6.0 (8)	6.3
Middlesex Water Company	2.5	0.5	2.3	NA	NA	6.0	[1]	6.0	NA	0.5	6.0	3.3	2.8	3.1
York Water Company	2.5 (5)	4.2 (5)	3.2	NA	NA	7.0	[1]	7.0	NA	2.5	7.0	5.0	4.3	4.7
Average	3.0 %	4.3 % (6)	6.0 %	3.2 %	9.5 %	6.7 %		7.5 %	7.2 %	2.6 %	9.4 %	6.1 %	5.2 %	6.7 %
Proxy Group of Three Value Line (Standard Edition) Water Companies														
American States Water Co.	1.0 %	1.5 %	4.4 %	1.5 %	6.5 %	3.0 %	[1]	5.3 %	7.1 %	1.0 %	9.5 %	5.3 %	4.0 %	4.7 %
Aqua America, Inc.	6.0	9.5	15.6	7.0	9.0	9.6	[5]	9.3	7.5	6.0	15.6	10.8	9.1	10.0
California Water Services Group	1.0	(6.5)	4.9	1.0	10.0	6.0	[3]	8.0	7.2	1.0 (8)	10.0 (8)	5.5	6.0 (8)	6.3
Average	2.7 %	5.5 % (6)	8.3 %	3.2 %	8.5 %	6.2 %		7.6 %	7.2 %	2.7 %	11.7 %	7.2 %	6.0 %	6.7 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance														
AGL Resources, Inc.	0.5 %	1.0 %	7.1 %	1.0 %	5.0 %	5.6 %	[5]	5.3 %	6.5 %	0.5 %	7.1 %	3.8 %	3.8 %	3.8 %
American States Water Co.	1.0	1.5	4.4	1.5	6.5	3.0	[1]	5.3	7.1	1.0	9.5	5.3	4.0	4.7
Aqua America, Inc.	6.0	9.5	15.6	7.0	9.0	9.6	[5]	9.3	7.5	6.0	15.6	10.8	9.1	9.8
California Water Services Group	1.0	(6.5)	4.9	1.0	10.0	6.0	[3]	8.0	7.2	1.0 (8)	10.0 (8)	5.5	6.0 (8)	5.5
Cinergy Corp.	0.5	3.0	5.1	2.0	3.5	4.3	[6]	5.9	4.3	0.5 (8)	6.1	2.8	3.2	3.0
Consolidated Edison, Inc.	1.0	0.5	3.5	1.0	(1.0)	2.3	[6]	2.3 (8)	2.4	0.5 (8)	3.5 (8)	2.0	1.8 (8)	1.9
Dominion Resources, Inc.	--	0.5	9.8	2.0	7.5	8.0	[6]	6.8	7.7	2.0	9.9	6.0	7.1	6.8
Green Mountain Power Corp.	(16.5)	14.5	5.4	12.5	3.5	NA	NA	3.6	6.1	3.5 (8)	14.5 (8)	9.0	8.2 (8)	8.6
KeySpan Corp.	4.0	21.0	5.0	1.0	6.5	4.7	[7]	5.8	5.5	1.0	6.5 (10)	3.8	4.5 (10)	4.2
Middlesex Water Company	2.5	0.5	2.3	NA	NA	6.0	[1]	6.0	NA	0.5	6.0	3.3	2.8	3.1
Northwest Natural Gas Co.	1.0	2.0	3.1	2.5	5.5	4.3	[2]	4.9	4.3	1.0	5.5	3.3	3.2	3.3
Pinnacle West Capital Corp.	7.5	1.5	6.2	4.5	2.5	3.8	[4]	3.2	3.3	1.5	7.5	4.5	4.2	4.4
PNM Resources, Inc.	8.0	4.5	5.9	4.5	(0.5)	5.0	[1]	5.0 (8)	3.7	3.7 (8)	8.0 (8)	5.9	5.5 (9)	5.6
Southern Company	1.0	1.5	4.6	4.0	5.0	4.6	[10]	4.6	4.9	1.0	5.0	3.0	3.7	3.4
Southwest Water Company	10.5	15.5	12.5	NA	NA	10.0	[4]	10.0	NA	10.0	15.5	12.8	12.8	12.8
Average	3.4 % (6)	5.0 % (6)(10)	5.4 %	3.4 %	5.1 % (9)	5.4 %		5.7 %	5.3 %	2.3 %	8.6 %	5.5 %	5.2 %	5.4 %

Notes:
(1) As shown on pages 10 through 25 of this Schedule. Historical growth rates are five-year compound growth rates.
(2) From page 2 of this Schedule.
(3) Average of Columns 5 and 6.
(4) From page 6 of this Schedule.
(5) Calculated using the same methodology as Value Line Investment Survey, i.e., three-year base periods ending 2003.
(6) Average of Columns 1, 2, 3, 4, 5, 6, and 8.
(7) From Column 7.
(8) Excludes negatives.
(9) Average of Column 11 and Column 12.
(10) Excludes the 21.0% five-year historical growth rate in EPS for KeySpan Corp. because, in Ms. Ahern's opinion, such a growth rate is clearly an outlier.

Source of Information: Value Line Investment Survey, September 17, October 1, October 29, November 12, and December 8, 2004
ThomsonFN First Call Earnings, ec.thomsonfn.com, updated December 4, 2004

Aqua Exhibit No. 3.0
Aqua Schedule 3.13
Page 1 of 25

Aqua Illinois, Inc. - Oak Run Division
Calculation of Historical BR + SV

	1	2	3	4	5
	BR (1)	S Factor (2)	V Factor (3)	SV (4)	BR + SV (5)
Proxy Group of Six C. A. Turner Water Companies					
American States Water Co.	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
Artesian Resources Corp.	2.2	8.0	40.6	3.2	5.4
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Middlesex Water Company	1.5	1.5	56.4	0.8	2.3
York Water Company	2.0	2.1	55.0	1.2	3.2
Average	2.7 %	6.1 %	51.5 %	3.3 %	6.0 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Average	3.5 %	8.3 %	52.4 %	4.8 %	8.3 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					
AGL Resources, Inc.	4.5 %	6.2 %	42.4 %	2.6 %	7.1 %
American States Water Co.	3.3	2.6	43.4	1.1	4.4
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Cinergy Corp.	4.1	2.4	41.3	1.0	5.1
Consolidated Edison, Inc.	2.8	2.2	31.6	0.7	3.5
Dominion Resources, Inc.	3.1	15.4	44.4	6.8	9.9
Green Mountain Power Corp.	5.8	2.1	(20.9)	(0.4)	5.4
KeySpan Corp.	3.5	4.2	34.9	1.5	5.0
Middlesex Water Company	1.5	1.5	56.4	0.8	2.3
Northwest Natural Gas Co.	2.9	0.9	27.6	0.2	3.1
Pinnacle West Capital Corp.	5.8	1.5	25.5	0.4	6.2
PNM Resources, Inc.	5.9	1.0	(1.8)	0.0	5.9
Southern Company	3.3	2.5	52.2	1.3	4.6
Southwest Water Company	8.3	7.2	54.9	4.0	12.3
Average	4.1 %	4.8 %	36.4 %	2.2 %	6.4 %

Notes:
(1) From column 6, pages 3, 4 and 5 of this Schedule.
(2) From column 12, page 6 of this Schedule.
(3) From column 7, page 7 of this Schedule.
(4) Column 2 * column 3.
(5) Column 1 + column 4.

Aqua Illinois, Inc. - Oak Run Division
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies
for the Years 1999 -2003

	1	2	3	4	5	6
	2003	2002	2001	2000	1999	Five-Year Average 1999-2003 Internal Growth Rate, i.e., BR
Proxy Group of Six C. A. Turner Water Companies						
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
Artesian Resources Corp.						
Common Equity Return Rate	7.41 %	9.67 %	9.80 %	7.39 %	9.74 %	
Retention Ratio	19.24	34.96	31.35	8.12	27.74	
Internal Growth Rate (1)	1.43	3.38	3.07	0.60	2.70	2.2
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Middlesex Water Company						
Common Equity Return Rate	8.17 %	10.10 %	9.37 %	7.16 %	11.05 %	
Retention Ratio	(6.51)	13.33	5.88	(21.76)	22.73	
Internal Growth Rate (1)	(0.53)	1.35	0.55	(1.56)	2.51	1.5 (2)
York Water Company						
Common Equity Return Rate	11.66 %	10.37 %	11.73 %	11.88 %	10.31 %	
Retention Ratio	21.04	12.32	21.97	21.50	10.46	
Internal Growth Rate (1)	2.45	1.28	2.58	2.55	1.08	2.0
Average						2.7 %
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Average						3.5 %

Notes: (1) The internal growth rate is calculated by multiplying the common equity return rate by the retention ratio (100% minus the dividend payout ratio). All data are on a consolidated basis.

(2) Excludes negatives.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database

Aqua Illinois, Inc. - Oak Run Division
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Fifteen Utilities Seleced on the Basis of Least Relative Distance
for the Years 1999 -2003

	1	2	3	4	5	6
	2003	2002	2001	2000	1999	Five-Year Average 1999-2003 Internal Growth Rate, i.e., BR
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance						
AGL Resources, Inc.						
Common Equity Return Rate	16.39 %	14.91 %	13.76 %	11.09 %	11.31 %	
Retention Ratio	48.49	41.26	34.08	15.89	16.53	
Internal Growth Rate (1)	7.95	6.15	4.69	1.76	1.87	4.5 %
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Cinergy Corp.						
Common Equity Return Rate	12.42 %	12.73 %	15.44 %	14.68 %	15.54 %	
Retention Ratio	25.79	24.85	35.27	28.59	29.51	
Internal Growth Rate (1)	3.20	3.16	5.45	4.20	4.59	4.1
Consolidated Edison, Inc.						
Common Equity Return Rate	8.51 %	11.53 %	12.25 %	10.71 %	12.25 %	
Retention Ratio	6.29	29.24	31.59	20.75	31.75	
Internal Growth Rate (1)	0.54	3.37	3.87	2.22	3.89	2.8
Dominion Resources, Inc.						
Common Equity Return Rate	9.15 %	14.66 %	7.08 %	7.07 %	10.95 %	
Retention Ratio	13.07	46.92	(19.30)	(48.19)	10.53	
Internal Growth Rate (1)	1.20	6.88	(1.37)	(3.41)	1.15	3.1 (2)
Green Mountain Power Corp.						
Common Equity Return Rate	10.78 %	11.71 %	11.24 %	(0.32) %	2.95 %	
Retention Ratio	63.30	70.82	71.45	1082.62	3.76	
Internal Growth Rate (1)	6.82	8.29	8.03	(3.46)	0.11	5.8 (2)

See page 5 for notes.

Aqua Illinois, Inc. - Oak Run Division
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
for the Years 1999 -2003

	1	2	3	4	5	6
	2003	2002	2001	2000	1999	Five-Year Average 1999-2003 Internal Growth Rate, i.e., BR
KeySpan Corp.						
Common Equity Return Rate	12.66 %	13.42 %	8.33 %	10.22 %	7.80 %	
Retention Ratio	32.52	35.60	(3.78)	15.19	(10.00)	
Internal Growth Rate (1)	4.12	4.78	(0.31)	1.55	(0.78)	3.5 % (2)
Middlesex Water Company						
Common Equity Return Rate	8.17 %	10.10 %	9.37 %	7.16 %	11.05 %	
Retention Ratio	(6.51)	13.33	5.88	(21.76)	22.73	
Internal Growth Rate (1)	(0.53)	1.35	0.55	(1.56)	2.51	1.5 (2)
Northwest Natural Gas Co.						
Common Equity Return Rate	9.24 %	8.73 %	10.38 %	10.29 %	10.08 %	
Retention Ratio	28.53	22.86	34.48	31.22	27.95	
Internal Growth Rate (1)	2.64	2.00	3.58	3.21	2.82	2.9
Pinnacle West Capital Corp.						
Common Equity Return Rate	8.36 %	8.30 %	13.41 %	13.18 %	12.35 %	
Retention Ratio	31.73	35.99	60.53	60.07	58.37	
Internal Growth Rate (1)	2.65	2.99	8.12	7.92	7.21	5.8
PNM Resources, Inc.						
Common Equity Return Rate	5.71 %	6.41 %	15.47 %	11.08 %	9.04 %	
Retention Ratio	37.23	45.95	79.11	68.77	48.17	
Internal Growth Rate (1)	2.13	2.95	12.24	7.62	4.35	5.9
Southern Company						
Common Equity Return Rate	16.06 %	15.79 %	11.98 %	9.99 %	13.43 %	
Retention Ratio	31.89	27.31	17.61	12.17	27.82	
Internal Growth Rate (1)	5.12	4.31	2.11	1.22	3.74	3.3
Southwest Water Company						
Common Equity Return Rate	10.20 %	10.32 %	12.12 %	12.16 %	15.53 %	
Retention Ratio	64.23	64.02	67.92	67.56	75.16	
Internal Growth Rate (1)	6.55	6.61	8.23	8.22	11.67	8.3
Average						4.1 %

Notes: (1) The internal growth rate is calculated by multiplying the common equity return rate by the retention ratio (100% minus the dividend payout ratio). All data are on a consolidated basis.

(2) Excludes negatives.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database

Aqua Illinois, Inc. - Oak Run Division
Calculation of Five Year Average Growth in Common Shares Outstanding (1), i.e., S Factor

	1	2	3	4	5	6	7	8	9	10	11	12
	1998 Common Shares Outstanding (1)	97-98 Growth	1999 Common Shares Outstanding (1)	98-99 Growth	2000 Common Shares Outstanding (1)	99-00 Growth	2001 Common Shares Outstanding (1)	00-01 Growth	2002 Common Shares Outstanding (1)	01-02 Growth	2003 Common Shares Outstanding (1)	Five Year Average Common Share Growth
Proxy Group of Six C. A. Turner Water Companies												
American States Water Co.	13.437	0.0 %	13.437	12.5 %	15.120	0.0 %	15.120	0.4 %	15.181	0.2 %	15.212	2.6 %
Aqua America, Inc.	54.154	47.9	80.104	4.7	83.869	1.9	85.483	(0.7)	84.896	9.1	92.589	15.9 (2)
Artesian Resources Corp.	2.704	10.8	2.997	0.8	3.020	1.3	3.060	26.2	3.863	1.0	3.901	8.0
California Water Services Group	12.619	2.5	12.936	17.1	15.146	0.2	15.182	0.0	15.182	11.5	16.932	6.3
Middlesex Water Company	9.794	2.1	10.002	1.0	10.098	0.7	10.168	1.8	10.356	2.0	10.567	1.5
York Water Company	5.960	(1.0)	5.902	1.8	6.010	5.0	6.308	0.9	6.365	0.8	6.419	2.1 (2)
Average												6.1 %
Proxy Group of Three Value Line (Standard Edition) Water Companies												
American States Water Co.	13.437	0.0 %	13.437	12.5 %	15.120	0.0 %	15.120	0.4 %	15.181	0.2 %	15.212	2.6 %
Aqua America, Inc.	54.154	47.9	80.104	4.7	83.869	1.9	85.483	(0.7)	84.896	9.1	92.589	15.9 (2)
California Water Services Group	12.619	2.5	12.936	17.1	15.146	0.2	15.182	0.0	15.182	11.5	16.932	6.3
Average												8.3 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance												
AGL Resources, Inc.	57.300	(0.3) %	57.100	(5.4) %	54.000	2.9 %	55.100	2.9 %	56.700	13.8 %	64.600	6.2 % (2)
American States Water Co.	13.437	0.0	13.437	12.5	15.120	0.0	15.120	0.4	15.181	0.2	15.212	2.6
Aqua America, Inc.	54.154	47.9	80.104	4.7	83.869	1.9	85.483	(0.7)	84.896	9.1	92.589	15.9 (2)
California Water Services Group	12.619	2.5	12.936	17.1	15.146	0.2	15.182	0.0	15.182	11.5	16.932	6.3
Cinergy Corp.	158.665	0.2	158.923	0.0	158.988	0.3	159.403	6.8	168.663	5.7	178.337	2.4
Consolidated Edison, Inc.	232.833	(8.2)	213.811	(0.8)	212.027	0.1	212.147	0.8	213.933	5.6	225.840	2.2 (2)
Dominion Resources, Inc.	194.500	(4.2)	186.300	31.9	245.800	7.7	264.700	16.4	308.000	5.5	325.000	15.4 (2)
Green Mountain Power Corp.	5.313	1.8	5.410	2.9	5.567	2.1	5.685	(12.8)	4.955	1.6	5.033	2.1 (2)
KeySpan Corp.	130.420	2.6	133.866	1.9	136.363	2.2	139.430	2.1	142.425	12.1	159.664	4.2
Middlesex Water Company	9.794	2.1	10.002	1.0	10.098	0.7	10.168	1.8	10.356	2.0	10.567	1.5
Northwest Natural Gas Co.	24.853	1.0	25.092	0.6	25.233	0.0	25.228	1.4	25.586	1.4	25.938	0.9
Pinnacle West Capital Corp.	84.825	0.0	84.825	0.0	84.825	0.0	84.825	7.6	91.255	0.0	91.288	1.5
PNM Resources, Inc.	62.661	(2.6)	61.054	(3.9)	58.677	0.0	58.677	0.0	58.677	2.9	60.388	1.0 (2)
Southern Company	697.605	(4.6)	665.796	2.3	681.158	2.5	698.344	2.6	716.402	2.6	734.800	2.5 (2)
Southwest Water Company	11.634	1.8	11.846	5.9	12.545	2.5	12.856	(3.6)	12.392	18.4	14.669	7.2 (2)
Average												4.8 %

Notes: (1) Year-end shares outstanding.
(2) Excludes negatives.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database

Aqua Illinois, Inc. - Oak Run Division
Calculation of the Premium/Discount of a
Company's Stock Price Relative to its Book Value, i.e., V Factor

	1	2	3	4	5	6	7
	1999 Market to Book Ratio (1)	2000 Market to Book Ratio (1)	2001 Market to Book Ratio (1)	2002 Market to Book Ratio (1)	2003 Market to Book Ratio (1)	Five Year Average Market to Book Ratio	V Factor (2)
Proxy Group of Six C. A. Turner Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.40 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.00
Artesian Resources Corp.	168.0	163.3	163.8	162.1	184.5	168.3	40.60
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.80
Middlesex Water Company	218.3	209.9	236.9	232.9	247.9	229.2	56.40
York Water Company	174.4	154.2	214.9	281.5	286.9	222.4	55.00
Average						213.0 %	51.50 %
Proxy Group of Three Value Line (Standard Edition) Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.40 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.00
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.80
Average						219.3 %	52.40 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance							
AGL Resources, Inc.	169.6 %	156.0 %	182.9 %	171.0 %	188.6 %	173.6 %	42.40 %
American States Water Co.	177.2	170.8	174.8	180.6	180.3	176.7	43.40
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.00
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.80
Cinergy Corp.	178.3	161.4	178.7	164.8	170.4	170.3	41.30
Consolidated Edison, Inc.	170.0	128.5	142.4	143.5	147.1	146.3	31.60
Dominion Resources, Inc.	182.6	190.4	208.3	168.2	179.4	179.8	44.40
Green Mountain Power Corp.	55.7	55.7	89.0	101.4	111.7	82.7	(20.90)
KeySpan Corp.	123.8	155.9	171.7	158.5	158.6	153.7	34.90
Middlesex Water Company	218.3	209.9	236.9	232.9	247.9	229.2	56.40
Northwest Natural Gas Co.	140.5	129.1	132.7	144.7	144.1	138.2	27.60
Pinnacle West Capital Corp.	142.8	144.9	153.5	116.1	113.9	134.2	25.50
PNM Resources, Inc.	85.7	94.5	122.6	94.6	93.7	98.2	(1.80)
Southern Company	185.5	187.6	208.7	230.4	233.3	209.1	52.20
Southwest Water Company	222.9	204.8	234.6	240.3	206.2	221.8	54.90
Average						173.0 %	36.40 %

Notes: (1) Market to Book Ratio = average of yearly high-low market price divided by the average of beginning and ending year's balance of book common equity per share.
(2) (1 - (100 / column 6)).

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database

Aqua Exhibit No. 3.0
Aqua Schedule 3.13
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Aqua Illinois, Inc. - Oak Run Division
Calculation of Projected BR + SV

	1	2	3	4	5	6	7	8	9	10	11
	Common Shares Outstanding (1) (000,000)			Projected 2007 - 2009 (1)							
	Actual 2003	Projected 2007-2009	S Factor (2)	High Stock Price	Low Stock Price	Book Value	Average Stock Price (3)	V Factor (4)	SV (5)	BR (6)	BR + SV (7)
Proxy Group of Six C. A. Turner Water Companies											
American States Water Co.	15.21	19.00	4.6 %	30.00	20.00	17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.6	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Middlesex Water Company	10.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
York Water Company	6.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			4.2 %					43.6 %	1.6 %	5.6 %	7.2 %
Proxy Group of Three Value Line (Standard Edition) Water Companies											
American States Water Co.	15.21	19.00	4.6 %	$30.00	$20.00	$17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.6	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Average			4.2 %					43.6 %	1.6 %	5.6 %	7.2 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance											
AGL Resources, Inc.	64.50	65.00	0.2 %	$40.00	$30.00	$20.10	$35.00	42.6 %	0.1 %	6.4 %	6.6 %
American States Water Co.	15.21	19.00	4.6	30.00	20.00	17.50	25.00	30.0	1.4	5.7	7.1
Aqua America, Inc.	92.59	100.00	1.6	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Cinergy Corp.	178.44	198.90	2.2	45.00	35.00	27.05	40.00	32.4	0.7	3.6	4.3
Consolidated Edison, Inc.	225.84	251.80	2.2	45.00	40.00	31.55	42.50	25.8	0.6	1.8	2.4
Dominion Resources, Inc.	325.00	336.00	0.6	90.00	65.00	4.00	77.50	94.8	0.6	7.1	7.7
Green Mountain Power Corp.	5.03	5.35	1.2	30.00	19.00	23.00	24.50	6.1	0.1	5.0	5.1
KeySpan Corp.	159.66	162.50	0.4	50.00	35.00	29.25	42.50	31.2	0.1	5.4	5.5
Middlesex Water Company	10.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Northwest Natural Gas Co.	25.94	28.00	1.5	35.00	25.00	23.50	30.00	21.7	0.3	4.0	4.3
Pinnacle West Capital Corp.	91.29	91.40	0.0	45.00	40.00	36.50	42.50	14.1	0.0	3.3	3.3
PNM Resources, Inc.	60.38	61.00	0.2	25.00	20.00	21.60	22.50	4.0	0.0	3.7	3.7
Southern Company	734.80	780.00	1.2	35.00	25.00	17.00	30.00	43.3	0.5	4.4	4.9
Southwest Water Company	14.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			1.7 %					34.4 %	0.6 %	4.7 %	5.3 %

NA = Not Available

Notes:
(1) From pages 10 through 26 of this Schedule.
(2) The S Factor is the six or five year compound growth rate between the 2002 and 2007 (mid-point of 2006-2008 projection) common shares outstanding.
(3) The Average Stock Price is the average of column 4 and column 5.
(4) (1 - (column 6 / column 7))
(5) Column 3 * column 8.
(6) From page 9, column 14 of this Schedule.
(7) Column 9 + column 10.

Source of Information: Value Line Investment Survey, September 17, October 1, October 29, November 12, and December 3, 2004

Aqua Illinois, Inc. - Oak Run Division
Projected Internal Growth Rate

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	2003			2007-2009					2007-2009					
	Common Equity (%) (1)	Total Capital ($ mill) (1)	Common Equity ($ mill) (2)	Common Equity (%) (1)	Total Capital ($ mill) (1)	Common Equity ($ mill) (3)	Annual Common Equity Growth Rate (4)	ROE Adjustment Factor (5)	Return on Common Equity (1)	Return on Average Common Equity (6)	EPS (1)	DPS (1)	Retention Ratio (7)	Projected Internal Growth (8)
Proxy Group of Six C. A. Turner Water Companies														
American States Water Co.	48.00 %	$442.30	$212.30	49.00 %	$700.00	$343.00	10.07 %	1.05 %	10.50 %	11.03 %	$2.00	$0.96	52.0 %	5.7 %
Aqua America, Inc.	49.60	1,355.70	668.97	48.00	2,100.00	966.00	7.65	1.04	13.00	13.52	1.20	0.64	46.7	6.3
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Services Group	47.00	520.30	244.54	50.00	840.00	420.00	11.42	1.05	11.00	11.55	2.00	1.18	41.0	4.7
Middlesex Water Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
York Water Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average														5.6 %
Proxy Group of Three Value Line (Standard Edition) Water Companies														
American States Water Co.	48.00 %	$442.30	$212.30	49.00 %	$700.00	$336.00	9.62 %	1.05 %	10.50 %	11.03 %	$2.00	$0.96	52.0 %	5.7 %
Aqua America, Inc.	49.60	1,355.70	668.97	48.00	2,100.00	1,020.60	9.16	1.04	13.00	13.52	1.20	0.64	46.7	6.3
California Water Services Group	47.00	520.30	244.54	47.00	840.00	394.80	10.05	1.05	11.00	11.55	2.00	1.18	41.0	4.7
Average														5.6 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance														
AGL Resources, Inc.	49.70 %	$1,901.40	$945.00	49.70 %	$2,605.00	$1,294.69	6.50 %	1.03 %	12.00 %	12.36 %	$2.40	$1.16	51.7 %	6.4 %
American States Water Co.	48.00	442.30	212.30	48.00	700.00	336.00	9.62	1.05	10.50	11.03	2.00	0.96	52.0	5.7
Aqua America, Inc.	49.60	1,355.70	668.97	48.60	2,100.00	1,020.60	9.16	1.04	13.00	13.52	1.20	0.64	46.7	6.3
California Water Services Group	47.00	520.30	244.54	47.00	840.00	394.80	10.05	1.05	11.00	11.55	2.00	1.18	41.0	4.7
Cinergy Corp.	48.90	7,895.40	3,702.94	48.90	9,680.00	4,493.02	3.94	1.02	11.00	11.22	3.00	2.04	32.0	3.6
Consolidated Edison, Inc.	48.00	13,369.00	6,417.12	48.00	15,985.00	7,663.20	3.61	1.02	9.00	9.18	2.80	2.34	19.5	1.8
Dominion Resources, Inc.	38.70	26,671.00	10,648.68	39.70	30,900.00	12,267.30	3.06	1.02	13.50	13.77	6.00	2.92	51.3	7.1
Green Mountain Power Corp.	50.50	197.90	99.94	50.50	235.00	118.68	3.50	1.02	10.50	10.71	2.40	1.26	46.7	5.0
KeySpan Corp.	39.10	9,356.90	3,659.65	39.10	10,650.00	4,164.15	2.62	1.01	12.00	12.12	3.45	1.90	44.9	5.4
Middlesex Water Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Northwest Natural Gas Co.	50.30	1,006.60	506.32	50.30	1,270.00	639.81	4.76	1.02	10.00	10.20	2.40	1.45	39.8	4.0
Pinnacle West Capital Corp.	49.40	5,727.50	2,829.39	48.40	6,236.00	3,080.09	1.71	1.01	9.00	9.09	3.35	2.15	35.8	3.3
PNM Resources, Inc.	51.90	2,077.30	1,078.12	51.90	2,320.00	1,204.08	2.23	1.01	7.00	7.07	1.55	0.74	52.3	3.7
Southern Company	43.60	22,136.00	9,650.86	43.60	27,660.00	12,055.40	4.55	1.02	14.00	14.28	2.45	1.70	30.6	4.4
Southwest Water Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average														4.7 %

NA = Not Available

Notes:
(1) From pages 10 through 25 of this Schedule.
(2) Column 1 * column 2.
(3) Column 4 * column 5.
(4) Five year compound growth rate in common equity from 2003 to 2007-2009 or ((((column 6 / column 3) ^ (1/5)) - 1)).
(5) 2 * ((1 + column 7) / (2 + column 7)).
(6) Column 8 * column 9.
(7) 1 - (column 12 / column 11).
(8) Column 10 * column 13.

Source of Information: Value Line Investment Survey, September 17, October 1, October 29, November 12, and December 3, 2004

AGL RESOURCES NYSE-ATG

RECENT PRICE 30.74 | P/E RATIO 14.9 (Trailing: 14.1 / Median: 14.0) | RELATIVE P/E RATIO 0.87 | DIV'D YLD 3.8% | VALUE LINE

TIMELINESS 4 Raised 8/6/04
SAFETY 2 New 7/27/90
TECHNICAL 3 Lowered 9/17/04
BETA .80 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	40	(+30%)	10%
Low	30	(Nil)	3%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	1	0	0	0	0	0	0	0
Options	0	0	2	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2003	4Q2003	1Q2004
to Buy	72	101	84
to Sell	97	67	75
Hld's(000)	34745	34511	35012

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
High:	21.3	19.4	20.0	22.0	21.6	23.4	23.4	23.2	24.5	25.0	29.3	31.2							Target Price Range 2007 / 2008 / 2009	
Low:	17.0	14.6	14.9	17.1	17.8	17.7	15.6	15.5	19.0	17.3	21.9	26.5								
	22.97	21.63	22.58	20.26	20.43	22.73	23.59	19.32	21.91	22.75	23.36	18.71	11.25	19.04	15.32	15.25	20.00	31.90	Revenues per sh A	36.90
	1.90	1.93	2.04	2.07	2.31	2.25	2.24	2.33	2.49	2.42	2.65	2.29	2.86	3.31	3.39	3.47	3.65	3.85	"Cash Flow" per sh	4.20
	1.13	.95	1.01	1.04	1.13	1.08	1.17	1.33	1.37	1.37	1.41	.91	1.29	1.50	1.82	2.08	2.10	2.20	Earnings per sh A B	2.40
	.88	.94	.98	1.02	1.03	1.04	1.04	1.04	1.06	1.08	1.08	1.08	1.08	1.08	1.08	1.11	1.15	1.16	Div'ds Decl'd per sh C	1.16
	2.86	2.65	2.73	2.95	2.74	2.49	2.37	2.17	2.37	2.59	2.05	2.51	2.92	2.83	3.30	2.46	2.45	2.45	Cap'l Spending per sh	2.55
	8.72	8.83	8.97	9.42	9.70	9.90	10.19	10.12	10.56	10.99	11.42	11.59	11.50	12.19	12.52	14.66	15.50	16.55	Book Value per sh	20.10
	42.47	43.40	44.32	47.57	48.69	49.72	50.86	55.02	55.70	56.60	57.30	57.10	54.00	55.10	56.70	64.50	65.00	65.00	Common Shs Outst'g D	65.00
	11.1	13.7	14.2	15.3	15.5	17.9	15.1	12.6	13.8	14.7	13.9	21.4	13.6	14.6	12.5	12.5	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	15.0
	.92	1.04	1.05	.98	.94	1.06	.99	.84	.86	.85	.72	1.22	.88	.75	.68	.72			Relative P/E Ratio	1.00
	7.1%	7.2%	6.8%	6.4%	5.9%	5.4%	5.9%	6.2%	5.6%	5.4%	5.5%	5.5%	6.2%	4.9%	4.7%	4.3%			Avg Ann'l Div'd Yield	3.3%
							1199.9	1063.0	1220.2	1287.6	1338.6	1068.6	607.4	1049.3	868.9	983.7	1885	2075	Revenues ($mill) A	2400
							63.2	74.3	75.6	76.6	80.6	52.1	71.1	82.3	103.0	132.4	135	145	Net Profit ($mill)	155
							35.2%	36.9%	38.6%	37.9%	32.5%	33.1%	34.3%	40.7%	36.0%	35.9%	36.0%	36.0%	Income Tax Rate	36.0%
							5.3%	7.0%	6.2%	5.9%	6.0%	4.9%	11.7%	7.8%	11.9%	13.5%	7.3%	6.9%	Net Profit Margin	6.5%
							49.0%	47.4%	46.2%	48.7%	47.5%	45.3%	45.9%	61.3%	58.3%	50.3%	49.0%	49.0%	Long-Term Debt Ratio	50.0%
							45.8%	47.6%	48.9%	45.9%	47.1%	49.2%	48.3%	38.7%	41.7%	49.7%	51.0%	51.0%	Common Equity Ratio	50.0%
							1131.5	1170.3	1201.3	1356.4	1388.4	1345.8	1286.2	1736.3	1704.3	1901.4	1965	2100	Total Capital ($mill)	2605
							1297.4	1350.3	1415.4	1496.6	1534.0	1598.9	1637.5	2058.9	2194.2	2352.4	2500	2700	Net Plant ($mill)	3000
							7.5%	8.2%	8.0%	7.3%	7.6%	5.7%	7.4%	6.5%	8.1%	8.9%	7.0%	7.0%	Return on Total Cap'l	6.0%
							11.0%	12.1%	11.7%	11.0%	11.1%	7.1%	10.2%	12.3%	14.5%	14.0%	13.5%	13.5%	Return on Shr. Equity	12.0%
							11.3%	12.5%	12.1%	11.3%	12.3%	7.9%	11.5%	12.3%	14.5%	14.0%	13.5%	13.5%	Return on Com Equity	12.0%
							3.0%	4.6%	3.8%	3.2%	4.4%	NMF	3.2%	4.2%	7.0%	6.6%	6.0%	6.5%	Retained to Com Eq	6.0%
							75%	66%	71%	74%	64%	101%	72%	65%	52%	53%	55%	52%	All Div'ds to Net Prof	49%

LEGENDS
1.15 x Dividends p sh divided by Interest Rate
Relative Price Strength
2-for-1 split 12/95
Options: Yes
Shaded area indicates recession

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	14.0	13.4
3 yr.	63.6	29.3
5 yr.	103.1	54.2

CAPITAL STRUCTURE as of 6/30/04
Total Debt 1123.0 mill. Due in 5 Yrs 383.0 mill.
LT Debt $962.0 mill. LT Interest $60.0 mill.

(Total interest coverage: 2.9x)
Leases, Uncapitalized Annual rentals $11.8 mill.
Pension Assets-12/03 $258.9 mill. Oblig. $314.6 mill.
Pfd Stock None
Common Stock 64,946,102 shs.
as of 7/23/04
MARKET CAP: $2.0 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2002	2003	6/30/04
Cash Assets	8.4	16.5	54.0
Other	578.0	730.8	796.0
Current Assets	586.4	747.3	850.0
Accts Payable	91.1	73.7	535.0
Debt Due	418.6	77.0	161.0
Other	506.1	903.7	320.0
Current Liab.	1015.8	1054.4	1016.0
Fix. Chg. Cov.	242%	172%	225%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	-2.5%	-6.0%	14.5%
"Cash Flow"	4.5%	6.0%	3.5%
Earnings	5.0%	5.5%	5.0%
Dividends	0.5%	0.5%	1.0%
Book Value	3.0%	3.5%	7.5%

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2001	294.8	350.6	175.7	228.2	1049.3
	Mar.31	Jun.30	Sep.30	Dec.31	
2002	269.3	159.2	190.7	249.7	868.9
2003	352.5	186.6	166.3	278.3	983.7
2004	651	294	360	580	1885
2005	590	485	445	555	2075

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2001	.41	.83	.17	.09	1.50
	Mar.31	Jun.30	Sep.30	Dec.31	
2002	.89	.21	.17	.55	1.82
2003	.98	.29	.27	.54	2.08
2004	1.00	.33	.25	.52	2.10
2005	.96	.38	.29	.57	2.20

Calendar	QUARTERLY DIVIDENDS PAID C Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.27	.27	.27	.27	1.08
2001	.27	.27	.27	.27	1.08
2002	.27	.27	.27	.27	1.08
2003	.27	.28	.28	.28	1.11
2004	.28	.29	.29		

BUSINESS: AGL Resources, Inc. is a public utility holding company. Its distribution subsidiaries are Atlanta Gas Light, Chattanooga Gas, and Virginia Natural Gas. The utilities have around 2 million customers in Georgia, primarily Atlanta, Virginia, and in southern Tennessee. Also engaged in nonregulated natural gas marketing and other, allied services. Also wholesales and retails propane. Nonregulated subsidiaries: Georgia Natural Gas Services markets natural gas at retail. Acquired Virginia Natural Gas, 10/00. Sold Utilipro, 3/01. Officers/directors own 1.2% of outstanding common shares (3/04 Proxy). President & CEO: Paula Rospot. Incorporated: Georgia. Address: 303 Peachtree St., N.E., Atlanta, GA 30308. Telephone: 404-584-9470. Internet: www.agiresources.com.

AGL Resources signed a definitive agreement to purchase NUI. The deal, subject to regulatory approval, calls for AGL to pay $220 million in cash and assume $471 million of the troubled utility's debt. NUI ran into difficulties following an overly aggressive move into nonregulated activities, which flopped and then spiraled into accounting irregularities and executive resignations. Subsequently, NUI shed most of its unregulated operations in the past year, retaining its gas utilities and gas storage and pipeline businesses. The acquisition will strengthen AGL's utilities footprint on the East Cost from Florida to New Jersey, and increase its service base by 20% to nearly 2.2 million customers. AGL hopes to close on the deal by November, and expects it to be accretive to earnings within the first year.

The company's thirst for expansion has extended beyond the NUI acquisition. It recently agreed to buy a natural gas storage facility from a subsidiary of American Electric Power for $86 million, plus another $9 million of marketable gas currently in inventory. The facility, located in Louisiana, consists of two salt dome gas storage caverns with 9.2 billion cubic feet of capacity. AGL made the move in order to provide additional access to natural gas for its regulated utilities. The deal is expected to close by October 1st.

Earnings for full-year 2004 should come in slightly ahead of last year's figure. Last quarter, AGL reported EPS of $0.33, compared to $0.29 a year earlier. The bottom line benefited from improvement in the company's utility operations, as a result of an increase in the average number of connected customers. Profits from AGL's nonregulated operations were down in the aggregate, however, as reduced volatility in gas prices lowered margins. We are holding our share-net estimate for 2004 unchanged at $2.10, but raising our 2005 estimate by a nickel, to $2.20, to account for the acquisitions.

This issue is a good-quality income stock. Its Price Stability (100) is excellent, and the stock provides a decent dividend yield. AGL's growth initiatives provide for decent capital gains potential for a utility, though the stock is already trading at company-record highs.

Michael P. Maloney *September 17, 2004*

(A) Fiscal year ends December 31st. Ended September 30th prior to 2002. (B) Diluted earnings per share. Next earnings report due late October. Excl. nonrecurring gains (losses): '88, $0.15; '95, d$0.83; '99, $0.39; '00, $0.13; '01, $0.13; '03, d$0.07. (C) Dividends historically paid early March, June, Sept, and Dec. • Div'd reinvest. plan available. (D) In millions, adjusted for stock split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	45
Earnings Predictability	65

AMER. STATES WATER NYSE-AWR

RECENT PRICE 24.09 | P/E RATIO 17.3 (Trailing: 26.5 Median: 16.8) | RELATIVE P/E RATIO 0.99 | DIV'D YLD 3.7% | VALUE LINE

TIMELINESS 4 Raised 11/7/03
SAFETY 3 New 2/4/00
TECHNICAL 3 Raised 8/20/04
BETA .70 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+25%)	9%
Low	20	(-15%)	Nil

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	4Q'03	1Q'04	2Q'04
to Buy	45	47	45
to Sell	31	33	35
Hld's(000)	5663	5823	5584

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
	8.58	9.12	9.58	9.15	10.10	9.27	10.43	11.03	11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	13.75	15.00	Revenues per sh	15.55
	1.13	1.44	1.49	1.78	1.81	1.67	1.68	1.75	1.75	1.85	2.04	2.26	2.20	2.53	2.54	2.06	2.60	2.90	"Cash Flow" per sh	3.40
	.65	.92	.94	1.19	1.15	1.11	.95	1.03	1.13	1.04	1.08	1.19	1.28	1.35	1.34	.72	1.20	1.50	Earnings per sh [A]	2.00
	.67	.69	.72	.73	.77	.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.88	.90	Div'd Decl'd per sh [B]	.96
	2.39	2.46	2.53	2.77	2.31	1.90	2.43	2.19	2.40	2.58	3.11	4.30	3.03	3.18	2.68	3.76	3.65	4.05	Cap'l Spending per sh	3.60
	7.07	7.31	7.54	8.39	8.85	9.95	10.07	10.29	11.01	11.24	11.48	11.82	12.74	13.22	14.05	13.97	14.65	15.35	Book Value per sh	17.50
	9.35	9.39	9.43	9.91	9.96	11.71	11.77	11.77	13.33	13.44	13.44	13.44	15.12	15.12	15.18	15.21	16.75	17.25	Common Shs Outst'g [C]	19.00
	14.2	9.7	10.2	6.8	10.6	13.4	12.8	11.6	12.6	14.5	15.5	17.1	15.9	16.7	18.3	31.9	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	13.0
	1.18	.73	.76	.56	.64	.79	.84	.78	.79	.84	.81	.97	1.03	.86	1.00	1.85			Relative P/E Ratio	.85
	7.4%	7.7%	7.5%	7.0%	6.3%	5.3%	6.6%	6.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%			Avg Ann'l Div'd Yield	3.8%
							122.7	129.8	151.5	153.8	148.1	173.4	184.0	197.5	209.2	212.7	230	255	Revenues ($mill)	300
							11.3	12.2	13.5	14.1	14.6	16.1	16.0	20.4	20.3	11.9	21.0	26.5	Net Profit ($mill)	38.0
							43.9%	41.9%	43.3%	41.1%	40.9%	46.0%	45.7%	43.0%	38.9%	43.5%	40.0%	40.0%	Income Tax Rate	40.0%
							--	--	--	--	--	--	--	--	--	--	Nil	Nil	AFUDC % to Net Profit	Nil
							43.5%	46.6%	41.9%	43.0%	43.6%	51.0%	47.5%	54.9%	52.0%	52.0%	51.0%	51.0%	Long-Term Debt Ratio	52.0%
							55.5%	52.5%	57.3%	56.3%	55.7%	48.4%	51.9%	44.7%	48.0%	48.0%	50.0%	49.0%	Common Equity Ratio	49.0%
							213.5	230.6	256.0	268.4	277.1	328.2	371.1	447.6	444.4	442.3	490	545	Total Capital ($mill)	700
							314.9	335.0	357.8	383.6	414.8	449.6	509.1	539.8	563.3	602.3	660	715	Net Plant ($mill)	850
							7.1%	7.2%	6.9%	6.9%	7.0%	6.6%	6.4%	6.1%	6.5%	4.6%	6.0%	6.5%	Return on Total Cap'l	7.0%
							9.4%	9.9%	9.0%	9.2%	9.4%	10.0%	9.2%	10.1%	9.5%	5.6%	9.0%	9.5%	Return on Shr. Equity	10.5%
							9.5%	10.0%	9.0%	9.2%	9.4%	10.1%	9.3%	10.1%	9.5%	5.6%	9.0%	9.5%	Return on Com Equity	10.5%
							1.6%	2.1%	2.4%	1.8%	2.1%	2.9%	3.0%	3.6%	3.3%	NMF	2.0%	3.5%	Retained to Com Eq	5.5%
							84%	79%	73%	80%	78%	72%	68%	65%	65%	113%	67%	58%	All Div'ds to Net Prof	48%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $284.3 mill. Due in 5 Yrs $60.0 mill.
LT Debt $229.5 mill. LT Interest $16.5 mill.
(Total interest coverage: 2.0x)

Leases, Uncapitalized: None
Pension Assets-12/03 $46.7 mill.
Oblig. $58.9 mill.
Pfd Stock None. Pfd Div'd None.

Common Stock 15,268,587 shs.
as of 8/9/04
MARKET CAP: $375 million (Small Cap)

CURRENT POSITION ($MILL.)	2002	2003	6/30/04
Cash Assets	18.4	12.8	7.0
Receivables	10.8	11.8	12.0
Inventory (Avg Cst)	.9	1.4	1.5
Other	21.7	32.4	23.6
Current Assets	51.8	58.4	44.1
Accts Payable	11.6	18.8	15.5
Debt Due	48.3	56.8	54.8
Other	19.6	20.3	22.5
Current Liab.	79.5	95.90	92.8
Fix. Chg. Cov.	285%	255%	200%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	3.5%	4.0%	3.0%
"Cash Flow"	3.0%	5.0%	7.0%
Earnings	--	1.5%	9.5%
Dividends	1.5%	1.0%	1.5%
Book Value	4.5%	4.0%	4.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2001	40.3	49.9	59.4	47.9	197.5
2002	44.5	52.8	61.6	50.3	209.2
2003	46.7	51.8	63.7	50.5	212.7
2004	46.7	59.3	69.0	55.0	230
2005	53.0	66.0	76.0	60.0	255

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2001	.21	.33	.63	.18	1.35
2002	.25	.36	.50	.23	1.34
2003	.20	.13	.51	d.12	.72
2004	.08	.30	.56	.26	1.20
2005	.27	.34	.61	.28	1.50

Calendar	QUARTERLY DIVIDENDS PAID [B] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.213	.213	.213	.217	.86
2001	.217	.217	.217	.217	.87
2002	.217	.217	.217	.221	.87
2003	.221	.221	.221	.221	.88
2004	.221	.221	.221		

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 9/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	9.8	18.8
3 yr.	11.5	55.9
5 yr.	33.9	63.9

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Southern California Water Company, it supplies water to 75 communities in 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to approximately 22,000 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/00); 11,400 customers. Has about 520 employees. Off. & dir. own less than 1% of common stock (4/04 Proxy). Chairman: Lloyd Ross. President & CEO: Floyd Wicks. Incorporated: CA. Add.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel.: 909-394-3600. Web: www.aswater.com.

American States Water is benefiting from an improving regulatory environment. The company reported second-quarter earnings of $0.30 a share (excluding non recurring items totaling $0.14), more than double the prior-year tally, primarily due to rate increases warranted by the California Public Utilities Commission (CPUC). Indeed, the board authorized an $8.1 increase in annual revenues for the company's Region III service area. In addition, the order allows for an additional $4.7 million in aggregate increases in 2004 and 2005.

More recent decisions should boost profitability in the second half. In August, AWR was authorized to increase rates in Region I and II, as well. The CPUC granted Region II $15.8 million in rate relief to be implemented incrementally over the next three years, including $5.2 million in 2004, as the higher rates are retroactive to February 14. Too, three service areas in Region I were authorized a $382,100 increase in annual revenues retroactive to the start of the year. Although these decisions will undoubtedly provide a much needed top-line boost, they also suggest that the CPUC's regulatory process is becoming more timely and reasonable in its decision-making process. In all, we look for AWR to increase earnings by more than 50% in 2004.

Capital constraints may limit further gains, though. Faced with increasingly stringent regulatory and infrastructure requirements, American has looked to the equity market to fund recent improvements. The company sold approximately 1.4 million shares at the end of September, netting nearly $36 million, and more offerings are likely on the way. As a result, despite brighter top-line prospects, we look for the company's earnings growth rate, to begin subsiding somewhat in 2005. AWR will probably utilize additional offerings to seek out takeover targets in the fragmented water utility industry.

Still, American shares probably do not appeal to most investors. They are untimely for year-ahead performance and offer below-average appreciation potential out to 2007-2009. That said, though, income-minded investors may find the issue of interest, for its dividend yield.

Andre J. Costanza *October 29, 2004*

(A) Primary earnings. Excludes nonrecurring gains: '91, 73¢; '92, 13¢; '04, 14¢. Next earnings report due late Jan.

(B) Dividends historically paid in early-March, June, September, December. • Div'd reinvestment plan available.

(C) In millions, adjusted for splits.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	70

AQUA AMERICA NYSE-WTR

RECENT PRICE 21.29 | P/E RATIO 24.5 (Trailing: 26.9 Median: 28.0) | RELATIVE P/E RATIO 1.40 | DIV'D YLD 2.4% | VALUE LINE

TIMELINESS 4 Lowered 6/4/04
SAFETY 3 Lowered 8/1/03
TECHNICAL 3 Raised 8/20/04
BETA .75 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+40%)	11%
Low	20	(-5%)	2%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	1	0	0	1	0	0
Options	0	0	0	0	0	1	0	0	0
to Sell	0	0	0	0	0	2	1	0	1

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	85	93	90
to Sell	86	73	62
Hld's(000)	26673	26637	26345

High: 5.3 5.0 5.5 7.6 11.4 15.4 15.4 16.0 19.7 20.0 22.4 22.8
Low: 4.0 4.4 4.4 5.2 5.9 9.7 10.1 8.4 12.5 12.8 15.8 18.9

LEGENDS
1.50 x Dividends p sh divided by Interest Rate
Relative Price Strength
3-for-2 split 7/96
4-for-3 split 1/98
5-for-4 split 12/00
5-for-4 split 12/01
5-for-4 split 12/03
Options: Yes
Shaded area indicates recession

Target Price Range 2007 2008 2009: 64 48 40 32 24 20 16 12 8 6

% TOT. RETURN 9/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	17.5	18.8
3 yr.	40.7	55.9
5 yr.	66.5	63.9

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
4.45	4.53	2.70	2.85	2.43	2.27	2.42	2.45	2.48	2.69	2.79	3.21	3.29	3.59	3.79	3.97	4.65	4.85	Revenues per sh	6.00
.66	.65	.58	.59	.52	.56	.56	.63	.67	.74	.81	.96	1.01	1.15	1.26	1.28	1.45	1.60	"Cash Flow" per sh	2.00
.30	.27	.33	.33	.31	.33	.35	.39	.40	.46	.53	.56	.62	.68	.72	.76	.85	.95	Earnings per sh A	1.20
.24	.24	.26	.26	.27	.27	.28	.29	.30	.32	.34	.36	.38	.40	.43	.46	.49	.52	Div'd Decl'd per sh B n	.64
.88	1.15	1.01	.72	.80	.63	.61	.69	.64	.77	1.09	1.20	1.55	1.45	1.60	1.76	1.60	1.55	Cap'l Spending per sh	1.50
2.88	2.92	2.80	2.76	2.79	3.05	3.21	3.28	3.59	3.79	4.28	4.57	5.13	5.53	5.81	7.12	7.55	7.95	Book Value per sh D	9.60
28.27	29.45	30.48	31.06	36.40	44.55	44.83	47.81	49.31	50.60	54.15	80.10	83.87	85.48	84.90	92.59	95.00	98.00	Common Shs Outst'g C	100.00
12.3	12.9	10.2	10.8	12.5	14.4	13.5	12.0	15.6	17.8	22.5	21.2	18.2	23.6	23.6	24.5	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	21.0
1.02	.98	.76	.69	.76	.85	.89	.80	.98	1.03	1.17	1.21	1.18	1.21	1.29	1.42			Relative P/E Ratio	1.40
6.5%	6.9%	7.7%	7.2%	6.8%	5.9%	6.0%	6.2%	4.9%	3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%			Avg Ann'l Div'd Yield	2.6%
						108.6	117.0	122.5	136.2	151.0	257.3	275.5	307.3	322.0	367.2	440	475	Revenues ($mill)	600
						15.6	19.0	19.8	23.2	28.8	45.0	50.7	58.5	62.7	67.3	80.0	95.0	Net Profit ($mill)	125
						42.5%	40.4%	41.4%	40.6%	40.5%	38.4%	38.9%	39.3%	38.5%	39.3%	40.0%	40.0%	Income Tax Rate	40.0%
						.8%	1.6%	1.3%	4.0%	4.3%	4.4%	5.3%	2.1%	2.2%	3.2%	3.5%	3.5%	AFUDC % to Net Profit	4.0%
						50.2%	51.9%	54.1%	54.4%	52.7%	52.9%	52.0%	52.2%	54.2%	51.4%	53.5%	54.5%	Long-Term Debt Ratio	54.0%
						47.4%	46.4%	44.0%	44.8%	46.6%	46.7%	47.8%	47.7%	45.8%	48.6%	46.5%	45.5%	Common Equity Ratio	46.0%
						303.1	338.0	401.7	427.2	496.6	782.7	901.1	990.4	1076.2	1355.7	1550	1725	Total Capital ($mill)	2100
						385.7	436.9	502.9	534.5	609.8	1135.4	1251.4	1368.1	1490.8	1824.3	1925	2025	Net Plant ($mill)	2300
						7.0%	7.7%	6.8%	7.4%	7.6%	7.6%	7.4%	7.8%	7.6%	6.4%	6.5%	7.0%	Return on Total Cap'l	7.5%
						10.4%	11.7%	10.7%	11.9%	12.3%	12.2%	11.7%	12.3%	12.7%	10.2%	11.0%	12.0%	Return on Shr. Equity	13.0%
						10.3%	11.7%	11.2%	12.0%	12.4%	12.3%	11.7%	12.4%	12.7%	10.2%	11.0%	12.0%	Return on Com Equity	13.0%
						2.1%	3.5%	2.8%	3.6%	4.5%	4.3%	4.7%	5.1%	5.2%	4.2%	5.0%	5.5%	Retained to Com Eq	6.0%
						81%	71%	75%	70%	64%	65%	60%	59%	59%	59%	57%	54%	All Div'ds to Net Prof	51%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $963.3 mill. Due in 5 Yrs $230.0 mill.
LT Debt $770.5 mill. LT Interest $45.0 mill.
(Total interest coverage: 3.5x)

Pension Assets-12/03 $108.7 mill.
Oblig. $150.1 mill.

Pfd Stock None

Common Stock 93,012,163 shares as of 7/28/04

MARKET CAP: $2.0 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2002	2003	6/30/04
Cash Assets	49.7	39.2	35.8
Receivables	57.7	62.3	67.6
Inventory (AvgCst)	4.6	5.8	7.2
Other	2.7	5.1	5.6
Current Assets	114.7	112.4	116.2
Accts Payable	31.1	32.3	13.1
Debt Due	149.4	135.8	192.8
Other	46.0	63.9	66.6
Current Liab.	226.5	232.0	272.5
Fix. Chg. Cov.	347%	344%	331%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.0%	7.5%	8.0%
"Cash Flow"	8.5%	10.5%	8.5%
Earnings	8.5%	9.5%	9.0%
Dividends	5.0%	6.0%	7.0%
Book Value	8.0%	9.5%	7.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	70.2	77.3	84.7	75.1	307.3
2002	71.7	76.6	91.9	81.8	322.0
2003	80.5	83.4	102.1	101.2	367.2
2004	99.8	106.5	*118.7*	*115*	*440*
2005	*105*	*115*	*130*	*125*	*475*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.14	.18	.22	.14	.68
2002	.14	.16	.25	.17	.72
2003	.15	.18	.24	.19	.76
2004	.17	.19	*.25*	*.24*	*.85*
2005	*.19*	*.23*	*.27*	*.26*	*.95*

Calendar	QUARTERLY DIVIDENDS PAID B n Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.092	.092	.092	.099	.38
2001	.099	.099	.099	.106	.40
2002	.106	.106	.106	.112	.43
2003	.112	.112	.112	.12	.46
2004	.12	.12	.12	.13	

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately 2.5 million residents in Pennsylvania, Ohio, New Jersey, Illinois, Maine, North Carolina, Texas, Florida, Kentucky, and five other states. Divested three of four non-water businesses in '91; telemarketing group in '93; and others. Acquired Consumers Water, 4/99; AquaSource, 7/03; and others. Water supply revenues '03: residential, 59%; commercial, 17%; industrial & other, 24%. Officers and directors own 1.4% of the common stock (4/04 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.

Aqua America probably realized moderate growth in the recently completed third quarter. Much of the increase will likely be from acquisitions, as the second-quarter purchases of Heater Utilities and a number of Florida water systems should be consolidated into results. Also, a number of states, including Texas, Pennsylvania, and New Jersey, have approved rate hikes in the 5% to 10% range, which should go into effect at various times throughout the second half of the year. However, results may well be tempered by the wetness during the quarter in much of the company's operating territory due to frequent hurricanes and tropical storms. Still, we expect moderate per-share increases over third- and fourth-quarter results from a year ago.

The company is further expanding through acquisitions. Most recently, Aqua has purchased a number of small units, mostly in Pennsylvania, to quietly broaden its customer base. Although management is confident in its ability to grow internally in the southern states, it may have to seek out larger acquisitions in northern regions to meet its 7% revenue growth target. All told, we expect the top line to expand by $35 million in 2005.

Aqua's management team gives it a competitive advantage. In the recent Pennsylvania rate case, WTR was awarded 10.6%, 0.6% above the judge's decision, by the water utility commission because of management's strong performance with quality and acquisitions. Furthermore, in North Carolina, the commission has allowed the company to add a portion of its goodwill impairment from the Heater acquisition to its rate base for every additional water system purchased in the state. This apparent leverage should come in handy during upcoming rate negotiations in a number of other states.

These shares carry a Below-Average Timeliness rank. They are also already trading within our 3- to 5-year Price Target Range. The stock's limited long-term growth prospects are a consequence of the industry's regulated nature. However, management has decided to raise the dividend for the December period, to $0.13, and we expect future rises to keep the company's earnings payout above 50%.

Matthew B. V. Albrecht *October 29, 2004*

(A) Primary shares outstanding through '96; diluted thereafter. Excl. nonrec. gains (losses): '90, (38¢); '91, (34¢); '92, (38¢); '99, (11¢); '00, 2¢; '01, 2¢; '02, 5¢; '03, 4¢. Excl. gain from disc. operations: '96, 2¢. Next earnings report due early February. (B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd. reinvestment plan available (5% discount). (C) In millions, adjusted for stock splits. (D) Incl. deferred charges. In '03: $34.3 mill., $0.37/sh.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	95
Earnings Predictability	100

CALIFORNIA WATER NYSE-CWT

RECENT PRICE 28.53 | P/E RATIO 16.6 (Trailing: 17.7 Median: 17.0) | RELATIVE P/E RATIO 0.95 | DIV'D YLD 4.0% | VALUE LINE

TIMELINESS 3 Raised 8/6/04
SAFETY 2 Lowered 8/11/95
TECHNICAL 3 Lowered 7/23/04
BETA .70 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+25%)	8%
Low	25	(-10%)	7%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	1	0	0	0	0	1	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	40	42	40
to Sell	15	19	30
Hld's(000)	3485	3785	4047

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
High:	20.6	20.5	17.6	21.9	29.6	33.8	32.0	31.4	28.6	26.9	31.4	30.2						
Low:	16.1	14.7	14.8	16.3	18.6	20.8	22.8	21.5	22.9	20.5	23.7	26.1						
Revenues per sh	10.03	10.33	10.93	11.18	12.29	13.34	12.59	13.17	14.48	15.48	14.76	15.96	16.16	16.26	17.33	16.371	16.00	19.00
"Cash Flow" per sh	1.87	1.89	1.97	1.96	1.92	2.25	2.02	2.07	2.50	2.92	2.60	2.75	2.52	2.20	2.65	2.51	3.20	3.30
Earnings per sh [A]	1.23	1.20	1.25	1.21	1.09	1.35	1.22	1.17	1.51	1.83	1.45	1.53	1.31	.94	1.25	1.21	1.70	1.75
Div'd Decl'd per sh [B n]	.80	.84	.87	.90	.93	.96	.99	1.02	1.04	1.06	1.07	1.09	1.10	1.12	1.12	1.12	1.13	1.13
Cap'l Spending per sh	2.12	2.40	2.36	3.03	3.09	2.53	2.26	2.17	2.63	2.61	2.74	3.44	2.45	4.09	5.82	4.39	3.25	3.65
Book Value per sh [C]	9.30	9.66	10.04	10.35	10.51	10.90	11.56	11.72	12.22	13.00	13.38	13.43	12.90	12.95	13.12	14.44	15.80	16.60
Common Shs Outst'g [D]	11.34	11.38	11.38	11.38	11.38	11.38	12.49	12.54	12.62	12.62	12.62	12.94	15.15	15.18	15.18	16.93	18.35	18.70
Avg Ann'l P/E Ratio	11.5	10.6	10.4	11.2	14.1	13.6	14.1	13.7	11.9	12.6	17.8	17.8	19.6	27.1	19.8	22.1	Bold figures are Value Line estimates	
Relative P/E Ratio	.95	.80	.77	.72	.86	.80	.92	.92	.75	.73	.93	1.01	1.27	1.39	1.08	1.28		
Avg Ann'l Div'd Yield	5.7%	6.6%	6.7%	6.6%	6.1%	5.2%	5.8%	6.4%	5.8%	4.6%	4.2%	4.0%	4.3%	4.4%	4.5%	4.2%		
Revenues ($mill)							157.3	165.1	182.8	195.3	186.3	206.4	244.8	246.8	263.2	277.1	330	355
Net Profit ($mill)							14.4	14.7	19.1	23.3	18.4	19.9	20.0	14.4	19.1	19.4	31.0	32.5
Income Tax Rate							40.0%	40.1%	38.9%	37.4%	36.4%	37.9%	42.3%	39.4%	39.7%	39.9%	40.0%	40.0%
AFUDC % to Net Profit							--	--	--	--	--	--	--	--	--	--	NIL	NIL
Long-Term Debt Ratio							46.6%	49.2%	47.4%	45.4%	44.2%	46.9%	48.9%	50.3%	55.3%	52.3%	50.0%	50.0%
Common Equity Ratio							52.2%	49.7%	51.4%	53.5%	54.7%	52.0%	50.2%	48.8%	44.0%	47.0%	49.0%	49.0%
Total Capital ($mill)							276.9	296.0	299.9	306.7	308.6	333.8	388.8	402.7	453.1	520.3	580	610
Net Plant ($mill)							407.9	422.2	443.6	460.4	478.3	515.4	582.0	624.3	697.0	759.5	815	865
Return on Total Cap'l							7.1%	6.8%	8.3%	9.4%	7.8%	7.8%	6.8%	5.3%	5.9%	5.6%	7.0%	7.0%
Return on Shr. Equity							9.7%	9.8%	12.1%	13.9%	10.7%	11.2%	10.0%	7.2%	9.4%	7.8%	10.5%	10.5%
Return on Com Equity							9.9%	9.9%	12.3%	14.1%	10.8%	11.4%	10.1%	7.2%	9.5%	7.9%	10.5%	10.5%
Retained to Com Eq							1.9%	1.2%	3.8%	6.0%	2.8%	3.5%	1.8%	NMF	1.0%	.7%	3.5%	4.0%
All Div'ds to Net Prof							81%	88%	69%	58%	74%	70%	82%	119%	90%	91%	67%	64%

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 9/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	18.5	18.8
3 yr.	23.7	55.9
5 yr.	35.8	63.9

© VALUE LINE PUB., INC. 07-09

CAPITAL STRUCTURE as of 6/30/04
Total Debt $272.9 mill. Due in 5 Yrs $10.7 mill.
LT Debt $272.0 mill. LT Interest $17.0 mill.

(LT interest earned: 2.8x; total int. cov.: 2.7x)

Pension Assets-12/03 $88.4 mill. Oblig. $63.2 mill.
Pfd Stock $3.5 mill. Pfd Div'd $.15 mill.
139,000 shares, 4.4% cumulative ($25 par).

Common Stock 18,345,496 shs.
as of 8/4/04.
MARKET CAP: $525 million (Small Cap)

CURRENT POSITION ($MILL.)	2002	2003	6/30/04
Cash Assets	1.1	2.9	24.1
Other	41.9	40.6	60.0
Current Assets	43.0	43.5	84.1
Accts Payable	23.7	23.8	28.6
Debt Due	24.8	7.3	.9
Other	43.0	32.5	36.4
Current Liab.	91.5	63.6	65.9
Fix. Chg. Cov.	250%	218%	202%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	3.0%	2.0%	3.5%
"Cash Flow"	2.0%	-1.5%	6.5%
Earnings	-.5%	-6.5%	10.0%
Dividends	2.0%	1.0%	1.0%
Book Value	2.5%	1.0%	5.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	47.0	67.0	76.3	56.5	246.8
2002	51.7	69.2	81.4	60.9	263.2
2003	51.3	68.0	88.2	69.6	277.1
2004	60.2	88.9	100	80.9	330
2005	70.0	95.0	105	85.0	355

Calendar	EARNINGS PER SHARE [A E] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.01	.34	.39	.20	.94
2002	.12	.43	.50	.20	1.25
2003	d.05	.30	.53	.41	1.21
2004	.08	.59	.70	.33	1.70
2005	.10	.56	.73	.36	1.75

Calendar	QUARTERLY DIVIDENDS PAID [B n] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.275	.275	.275	.275	1.10
2001	.279	.279	.279	.279	1.12
2002	.28	.28	.28	.28	1.12
2003	.281	.281	.281	.281	1.12
2004	.283	.283	.283	.283	

BUSINESS: California Water Service Group provides regulated and nonregulated water service to over 2 million people (461,200 customers) in 98 communities in California, Washington, and New Mexico. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired National Utility Company (5/04); Rio Grande Corp. (11/00). Revenue breakdown, '03: residential, 70%; business, 18%; public authorities, 5%; industrial, 4%; other, 3%. '03 reported deprec. rate: 2.2%. Has about 815 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson. Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwater.com.

California Water Service Group appears to be on the road to recovery. The company reported second-quarter earnings of $0.59, nearly double last year's figure, and $0.18 above our estimate. Revenues increased 31%, as hot and dry weather prompted higher usage rates, as well as new customer growth. However, the bulk of the upside was a result of a favorable rate order from the California Public Utilities Commission (CPUC), which added almost $10 million. Further gains were offset by higher prices from wholesalers, though, as Cal was forced to purchase about half of its supply.

We are adding a dime to our 2004 earnings estimate, and now expect Cal to earn $1.70 a share. Although usage rates will likely decline as we head into the cooler winter months, more timely rate decisions ought to drive favorable second-half earnings comparisons. The CPUC, which has been a stumbling block in recent years, appears to be settling cases in a more timely fashion of late. In fact, the board recently approved a $1.1 million increase in annual revenues for the Salinas district.

Additional rate case decisions augur well for Cal heading forward. . . Cal is expected to file a general rate case for one-third of its districts, which covers approximately 40% of its customer base. In addition, it expects a decision on another case totaling almost $8.0 million.

. . .but stricter regulatory laws may limit profits. The costs of meeting regulatory guidelines continue to increase and it doesn't seem as though they will moderate in the coming years. Indeed, the growing threats of terrorist activity on U.S. drinking systems ought to keep infrastructure maintenance costs elevated. Additional equity offerings will likely be necessary, given the company's cash requirements. Thus, we look for gains to be tempered over the next couple of years.

Cal shares may appeal to income-minded investors. CWT's dividend yield is tops among the water utility group. However, others will want to take a pass as these untimely shares hold little gains appeal out to late decade. Cal's cash strain may also impede it from participating in the industry's consolidation theme.

Andre J. Costanza *October 29, 2004*

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; Q2 '02, 8¢. Next earnings report due late Jan.

(B) Dividends historically paid in mid-Feb., May, Aug., Nov. n Div'd reinvestment plan available.

(C) Incl. deferred charges. In '03: $38.0 mill., $2.25/sh.

(D) In millions, adjusted for split.

(E) May not total due to change in shares.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	90
Earnings Predictability	70

CINERGY NYSE-CIN

RECENT PRICE 40.33 | P/E RATIO 14.8 (Trailing: 18.2 Median: 14.0) | RELATIVE P/E RATIO 0.85 | DIV'D YLD 4.7% | VALUE LINE

TIMELINESS 4 Raised 9/17/04
SAFETY 2 New 1/13/95
TECHNICAL 3 Lowered 9/24/04
BETA .80 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(+10%)	7%
Low	35	(-15%)	2%

Insider Decisions

	N	D	J	F	M	A	M	J	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	4	3	0	0	4	0	3
to Sell	0	0	1	1	0	0	1	0	3

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	177	165	157
to Sell	130	125	140
Hld's(000)	106374	108003	113833

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Hi:	29.6	27.6	31.1	34.3	39.1	39.9	34.9	35.3	35.6	37.2	38.9	41.1
Lo:	23.9	20.8	23.4	27.5	32.0	30.8	23.4	20.0	28.0	25.4	29.8	34.9

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	24.3	13.4
3 yr.	47.5	29.3
5 yr.	72.9	54.2

Cinergy was formed on October 24, 1994 through the merger of Cincinnati Gas & Electric and PSI Resources. Each common share of Cincinnati Gas & Electric was exchanged for 1.00 share of Cinergy, while each common share of PSI Resources was exchanged for 1.023 Cinergy shares. Pre-merger data are figures for Cincinnati Gas & Electric only and are not comparable to Cinergy data.

CAPITAL STRUCTURE as of 6/30/04
Total Debt $5153.3 mill. Due in 5 Yrs $3020.0 mill.
LT Debt $3986.2 mill. LT Interest $201.0 mill.
(LT interest earned: 3.3x)
Pension Assets-12/03 $877.3 mill. Oblig. $1457.8 mill.
Pfd Stock $62.8 mill. Pfd Div'd $3.4 mill.
552,451 shs. 3.5% to 6.875% ($100 par); callable at $100 to $108 a sh.; 303,544 shs. 4.16% to 4.32% $25 par, call. at $25.

Common Stock 180,577,342 shs. as of 7/31/04
MARKET CAP: $7.3 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	-1.0	+.8	-1.5
Avg. Indust. Use (MWH)	2751	2701	2639
Avg. Indust. Revs. per KWH (¢)	4.10	4.01	4.01
Capacity at Peak (Mw)	11083	11249	13331
Peak Load, Summer (Mw)	11091	11133	11305
Annual Load Factor (%)	61.3	62.4	54.5
% Change Customers (yr-end)	+1.3	+.8	+1.0
Fixed Charge Cov. (%)	328	282	286

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	12.0%	15.5%	-15.0%
"Cash Flow"	2.5%	2.5%	4.0%
Earnings	1.5%	3.0%	3.5%
Dividends	1.0%	.5%	2.0%
Book Value	.5%	4.0%	5.5%

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	3707	3642	3324	2250	12923
2002	2192	2471	3880	3417	11960
2003	1268	933.9	1092	1122	4415.9
2004	1289	1054	*1120*	*1157*	*4620*
2005	*1320*	*1100*	*1150*	*1180*	*4750*

EARNINGS PER SHARE A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.75	.51	.80	.69	2.75
2002	.58	.27	.78	.59	2.22
2003	.80	.42	.62	.59	2.43
2004	.68	.32	.92	.73	2.65
2005	.75	.40	.90	.70	2.75

QUARTERLY DIVIDENDS PAID B

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.45	.45	.45	.45	1.80
2001	.45	.45	.45	.45	1.80
2002	.45	.45	.45	.45	1.80
2003	.46	.46	.46	.46	1.84
2004	.47	.47	.47		

	1994 E	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
	18.84	19.23	20.57	27.59	37.04	37.36	52.96	61.07	70.91	24.75	*25.50*	*24.50*	Revenues per sh	*25.75*
	3.13	3.98	3.99	4.75	4.02	4.34	4.87	5.15	4.59	4.78	*5.00*	*5.15*	"Cash Flow" per sh	*6.10*
	1.30	2.22	2.19	2.30	1.97	2.10	2.50	2.75	2.22	2.43	*2.65*	*2.75*	Earnings per sh A	*3.00*
	1.72	1.72	1.74	1.80	1.80	1.80	1.80	1.80	1.80	1.84	*1.88*	*1.92*	Div'd Decl'd per sh B=	*2.04*
	3.09	2.06	2.05	2.08	2.32	2.43	3.27	5.31	5.08	3.95	*4.15*	*4.35*	Cap'l Spending per sh	*4.20*
	15.56	16.17	16.39	16.10	16.02	16.70	17.36	18.45	19.53	20.74	*21.70*	*21.55*	Book Value per sh C	*27.05*
	155.20	157.67	157.68	157.74	158.66	158.92	158.97	159.40	168.66	178.44	*181.10*	*193.80*	Common Shs Outst'g F	*198.90*
	17.8	11.9	14.1	14.9	17.6	14.2	11.0	11.7	15.0	14.4	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*13.5*
	1.17	.80	.88	.86	.92	.81	.72	.50	.82	.83			Relative P/E Ratio	*.90*
	7.4%	6.5%	5.6%	5.3%	5.2%	6.1%	6.6%	5.6%	5.4%	5.2%			Avg Ann'l Div'd Yield	*5.1%*
	2924.2	3031.4	3242.7	4352.8	5876.3	5937.9	8422.0	12923	11960	4415.9	*4620*	*4750*	Revenues ($mill)	*5120*
	226.7	378.0	369.0	472.0	318.1	340.8	404.1	446.8	364.0	437.9	*475*	*520*	Net Profit ($mill)	*595*
	40.2%	36.7%	37.2%	34.5%	26.9%	38.0%	38.4%	36.4%	30.2%	24.7%	*25.0%*	*25.0%*	Income Tax Rate	*25.0%*
	8.2%	2.7%	2.0%	1.2%	.5%	1.2%	2.0%	7.3%	5.6%	1.7%	*2.0%*	*2.0%*	AFUDC % to Net Profit	*2.0%*
	48.4%	46.3%	47.7%	44.2%	49.7%	52.1%	50.2%	52.1%	52.7%	52.3%	*51.0%*	*47.0%*	Long-Term Debt Ratio	*43.0%*
	43.1%	46.6%	48.6%	52.2%	48.5%	46.3%	48.2%	42.6%	42.5%	46.9%	*48.5%*	*52.0%*	Common Equity Ratio	*56.0%*
	5607.5	5467.5	5313.7	4868.1	5238.3	5735.6	5728.2	6907.4	7745.3	7895.4	*8125*	*8770*	Total Capital ($mill)	*9580*
	6198.9	6251.1	6289.6	6297.1	6344.5	6417.5	6630.4	6236.9	8648.7	9627.5	*9950*	*10310*	Net Plant ($mill)	*11120*
	6.0%	8.9%	8.7%	11.6%	7.7%	7.7%	8.4%	7.9%	6.1%	6.9%	*7.0%*	*7.0%*	Return on Total Cap'l	*7.5%*
	7.8%	12.9%	13.3%	17.4%	12.1%	12.4%	14.2%	13.5%	9.9%	11.6%	*12.0%*	*11.0%*	Return on Shr. Equity	*11.0%*
	7.9%	13.6%	13.4%	18.1%	12.3%	12.6%	14.5%	15.0%	10.9%	11.7%	*12.0%*	*11.0%*	Return on Com Equity D	*11.0%*
	NMF	3.1%	2.8%	6.9%	1.1%	1.9%	4.1%	5.3%	1.9%	3.0%	*3.5%*	*3.5%*	Retained to Com Eq	*3.5%*
	113%	79%	81%	63%	91%	86%	72%	65%	83%	74%	*71%*	*70%*	All Div'ds to Net Prof	*68%*

BUSINESS: Cinergy Corp. is a holding company formed through the merger of Cincinnati Gas & Electric and PSI Resources. Supplies elect. (81% of revs.) to 1,500,000 customers, natural gas (19%) to 496,000 customers, in Ohio, Kentucky, and Indiana. Elect. (Gas) revs.: resid. 43% (66%); commer., 28% (26%); indust., 25% (4%); *other 4% (4%). The primary metal and chemical industries* are the largest customers. Fuel costs: 39% of revenues. '03 deprec. rate: 2.8%. Est'd plant age: 12 years. Fuels: coal, 87%; natural gas, 8%; *other, 5%.* Has 7,693 employees, 52,506 common stockholders. Chairman, President & CEO: James E. Rogers. Inc.: Delaware. Address: 139 East 4th St., Cincinnati, OH 45202. Tel.: 800-544-6900. *Internet: www.cinergy.com.*

Cinergy's Kentucky Union Light, Heat and Power subsidiary seeks to buy generating assets from an affiliate. ULH&P has been relying on power purchased from Cincinnati G&E (CG&E), which operates in Ohio's deregulated electric market, to meet its obligations. This has subjected the utility to fluctuations in wholesale power prices. ULH&P's request to buy 1,105 megawatts of capacity from CG&E for $380 million has been approved by Kentucky regulators. Consent of the SEC and the Federal Energy Regulatory Commission is still needed. CG&E advises that the transfer would not affect current electric rates, since power will be provided under the terms of the existing contract through the end of 2006. The Kentucky commission has directed ULH&P to file for new rates in time to allow them to take effect in January, 2007.

The company has a rate agreement in Ohio. The pact calls for yearly generation rate adjustments in a range of 5% to 8%. The increases, starting in 2005, would reflect expenses related to providing reserves necessary to maintain adequate electric supplies as well as the cost of environmental compliance, and homeland security and emission allowances. Too, CIN would defer its transmission and distribution request for an increase of $78.1 million until 2006. Finally, the 5% residential rate reduction would be extended for another three years through 2008.

Last year's reduced headcount should help lift earnings in 2004. In addition, retail energy sales should continue to rise at a 1.5% annual rate, and interest expense will be lower as construction spending to comply with The Clean Air Act declines. Last May's $153.5 million rate increase in Indiana is another plus. On the down side, pension and medical costs keep moving higher, and more common shares are outstanding. In all, we estimate a 9% gain in 2004 earnings, to $2.65 a share, and modest improvement next year. The stock is untimely.

Income-oriented investors might take a look here. The yield is a full percentage point above the industry norm. And our projection of steady earnings growth to 2007-2009 suggests increased dividends at a rate almost double that of the group.

Arthur H. Medalie *October 1, 2004*

(A) EPS diluted. Excl. extraord. gains (losses): '93, ($2.55); '96, (12¢); '97, (69¢); '98, (32¢); '99, 43¢; '03, 15¢; '04, (11¢). Next egs. rpt. due late Oct. (B) *Div'ds historically paid mid-Feb., mid-May, mid-Aug., and mid-Nov.* = Div'd reinvest. plan avail. (C) Incl. def. chgs. In '03, $5.93/sh.(D) Rate base: net original cost. Allowed on com. eq.: Ohio in '93: elect., 12.9%; Indiana in '04: 10.5%. Earned avg. com. eq. '03: 12.4%. Regul. Clim.: Above Avg. (E) Pro forma. (F) In mill., adjust. for split.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	40
Earnings Predictability	90

CON. EDISON NYSE-ED

RECENT PRICE 45.15 | P/E RATIO 17.4 (Trailing: 16.6 / Median: 12.0) | RELATIVE P/E RATIO 0.93 | DIV'D YLD 5.0% | VALUE LINE

TIMELINESS 4 Raised 9/3/04
SAFETY 1 New 7/27/90
TECHNICAL 3 Raised 11/5/04
BETA .60 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(NIL)	5%
Low	40	(-10%)	3%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	1	0	0	0	0	0	3	0	2
Options	8	0	1	0	0	0	0	0	1
to Sell	3	0	1	0	0	0	1	3	1

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	160	160	192
to Sell	148	147	121
Hld's(000)	89933	98284	106296

	2007	2008	2009
Target Price Range			

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	13.4	12.5
3 yr.	29.5	49.3
5 yr.	47.9	66.7

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
High:	37.8	32.4	32.3	34.8	41.5	56.1	53.4	39.5	43.4	45.4	46.0	45.6								
Low:	30.3	23.0	25.5	25.9	27.0	39.1	33.6	26.2	31.4	32.7	36.8	37.2								
Revenues per sh	22.41	24.33	25.15	25.72	25.36	26.73	27.13	27.82	29.62	30.24	30.46	35.04	44.48	45.41	39.65	43.51	*40.45*	*40.75*	Revenues per sh	*41.40*
"Cash Flow" per sh	3.82	3.92	3.84	3.90	4.06	4.38	4.77	4.87	4.97	5.08	5.29	5.74	5.51	5.70	5.44	5.12	*4.90*	*5.30*	"Cash Flow" per sh	*5.80*
Earnings per sh A	2.47	2.49	2.34	2.32	2.46	2.66	2.98	2.93	2.93	2.95	3.04	3.13	2.74	3.21	3.13	2.83	*2.65*	*2.80*	Earnings per sh A	*2.90*
Div'd Decl'd per sh B ■	1.60	1.72	1.82	1.86	1.90	1.94	2.00	2.04	2.08	2.10	2.12	2.14	2.18	2.20	2.22	2.24	*2.26*	*2.28*	Div'd Decl'd per sh B ■	*2.34*
Cap'l Spending per sh	2.52	2.68	3.05	3.39	3.40	3.37	3.22	2.95	2.87	2.78	2.66	3.17	4.52	5.20	5.68	5.72	*4.85*	*6.00*	Cap'l Spending per sh	*4.35*
Book Value per sh C	18.44	19.21	19.73	20.18	20.89	21.63	22.62	23.51	24.37	25.18	25.88	25.31	25.81	26.71	27.68	28.44	*29.40*	*30.05*	Book Value per sh C	*31.85*
Common Shs Outst'g	227.99	228.15	228.23	228.33	233.93	234.37	234.91	234.96	234.99	235.49	232.83	213.81	212.03	212.15	213.93	225.84	*242.20*	*244.60*	Common Shs Outst'g	*251.80*
Avg Ann'l P/E Ratio	9.0	10.0	10.3	10.8	11.9	13.1	9.3	9.8	10.1	10.9	15.3	14.0	12.0	12.0	13.3	14.3	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*14.5*
Relative P/E Ratio	.75	.76	.77	.69	.72	.77	.61	.66	.63	.63	.80	.80	.78	.61	.73	.83			Relative P/E Ratio	*.95*
Avg Ann'l Div'd Yield	7.2%	6.9%	7.5%	7.5%	6.5%	5.6%	7.2%	7.1%	7.0%	6.5%	4.6%	4.9%	6.6%	5.7%	5.3%	5.5%			Avg Ann'l Div'd Yield	*5.6%*
Revenues ($mill)							6373.1	6536.9	6959.7	7121.3	7093.1	7491.3	9431.4	9634.0	8481.9	9827.0	*9800*	*9970*	Revenues ($mill)	*10420*
Net Profit ($mill)							734.3	723.9	694.1	712.8	729.8	714.2	596.4	695.8	682.1	639.0	*635*	*695*	Net Profit ($mill)	*740*
Income Tax Rate							37.4%	35.4%	36.4%	34.8%	35.8%	34.3%	34.8%	40.0%	36.9%	33.7%	*34.0%*	*34.0%*	Income Tax Rate	*34.0%*
AFUDC % to Net Profit							1.8%	.8%	.7%	.9%	.5%	.8%	1.2%	1.3%	2.2%	4.2%	*3.0%*	*3.0%*	AFUDC % to Net Profit	*2.0%*
Long-Term Debt Ratio							40.7%	39.1%	41.2%	40.1%	39.2%	44.4%	48.6%	48.2%	50.1%	50.4%	*49.5%*	*49.0%*	Long-Term Debt Ratio	*48.5%*
Common Equity Ratio							53.0%	54.5%	55.7%	56.8%	58.4%	53.1%	49.1%	49.6%	48.1%	48.0%	*49.0%*	*49.5%*	Common Equity Ratio	*50.0%*
Total Capital ($mill)							10032	10125	10289	10437	10325	10186	11137	11417	12302	13369	*14470*	*14890*	Total Capital ($mill)	*15965*
Net Plant ($mill)							10561	10814	11067	11267	11407	11354	11893	12248	13329	15225	*15830*	*16690*	Net Plant ($mill)	*17920*
Return on Total Cap'l							8.8%	8.6%	8.2%	8.4%	8.6%	8.6%	7.0%	7.8%	7.1%	6.3%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.0%*
Return on Shr. Equity							12.3%	11.7%	11.5%	11.4%	11.6%	12.6%	10.4%	11.8%	11.1%	9.6%	*8.5%*	*9.0%*	Return on Shr. Equity	*9.0%*
Return on Com Equity D							13.2%	12.5%	11.7%	11.7%	11.8%	12.9%	10.7%	12.0%	11.3%	9.8%	*9.0%*	*9.5%*	Return on Com Equity D	*9.0%*
Retained to Com Eq							4.3%	3.8%	3.2%	3.4%	3.6%	4.1%	2.2%	3.8%	4.0%	2.9%	*1.5%*	*1.5%*	Retained to Com Eq	*1.5%*
All Div'ds to Net Prof							69%	71%	74%	72%	70%	69%	80%	69%	65%	71%	*86%*	*82%*	All Div'ds to Net Prof	*81%*

CAPITAL STRUCTURE as of 6/30/04
Total Debt $7302 mill. Due in 5 Yrs $1303 mill.
LT Debt $6971 mill. LT Interest $417.0 mill.
(LT interest earned: 3.1x)
Pension Assets-12/03 $6.7 bill. Oblig. $6.7 bill.

Pfd Stock $212.6 mill. Pfd Div'd $12.5 mill.
1,915,319 shs. $5 cum. no par, call. $105 a sh.;
375,626 shs. 4.65% cum. $100 par, call. $101 to $102.50 a sh. Sinking Fund ends 2009; 370,500 shs. 6.125% cum. $100 par.

Common Stock 241,451,273 shs. as of 7/30/04
MARKET CAP: $10.9 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	+2.9	-2.3	-3.4
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	629	629	630
Peak Load, Summer (Mw)	12207	12086	11875
Annual Load Factor (%)	NMF	NMF	NMF
% Change Customers (y-end)	+.7	+.5	+.6
Fixed Charge Cov. (%)	342	313	289

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	5.0%	7.5%	-.5%
"Cash Flow"	3.0%	1.0%	1.0%
Earnings	2.0%	.5%	-1.0%
Dividends	1.5%	1.0%	1.0%
Book Value	3.0%	2.0%	2.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	2886	2112	2693	1943	9634.0
2002	2036	1849	2540	2057	8481.9
2003	2571	2176	2801	2279	9827.0
2004	2685	2169	2743	*2203*	*9800*
2005	*2720*	*2200*	*2800*	*2250*	*9970*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.84	.48	1.30	.59	3.21
2002	.78	.46	1.33	.56	3.13
2003	.72	.29	1.16	.66	2.83
2004	.68	.37	1.01	.59	2.65
2005	*.70*	*.30*	*1.20*	*.60*	*2.80*

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.545	.545	.545	.545	2.18
2001	.55	.55	.55	.55	2.20
2002	.555	.555	.555	.555	2.22
2003	.56	.56	.56	.56	2.24
2004	.565	.565	.565		

BUSINESS: Consolidated Edison, Inc., parent of Consolidated Edison Company of New York, Inc., sells electricity (78% of revs.), gas (16%), steam (6%) in most of New York City and Westchester County. Acquired Orange & Rockland Utilities 7/99. Commercial rev. ratio (55%) compares with 32% for the industry. Nonincome taxes and avg. price per kwh are among the highest in U.S. Fuel costs: 61% of revs.; labor costs, 14%. 2003 reported deprec. rate: 3.0%. Est'd plant age: 8 years. In '03, purch. almost all energy it sold on firm contracts with nonutility generators. Has 14,000 empls, 93,760 common shareholders. Chmn., CEO & Pres.: Eugene R. McGrath. Inc.: N.Y. Add.: 4 Irving Place, New York, N.Y. 10003. Tel.: 212-460-3903. Internet: www.coned.com.

Consolidated Edison's dispute with Northeast Utilities (NU) is in federal court. The two companies' agreement to merge in 1999 fell apart a year later, with each party accusing the other of violating contract terms. ED filed suit, claiming that NU entered into unprofitable arrangements that would eliminate most of the alliance's benefits and that this constituted a legal basis for terminating the deal. NU countersued, seeking $1 billion in damages for ED's breaching the pact that would have given NU shareholders an acquisition premium of that amount if the merger had closed. The court has given no indication when it will hear the case. An unfavorable ruling would have a material adverse effect on the company.

Two rate cases have been decided; a third is unresolved. The gas order provides for a single increase in base rates of $46.8 million effective last October, with rates then frozen for two years. In addition, the company will retain the first $35 million of net revenues from nonfirm customer transactions in each of the three years covered by the order. ED also received higher steam rates of $49.6 million effective last October and another $27.4 million in October of the following year. In the electric area, management filed for $472 million. An order on the request is due in March. The increase would recoup the $4.5 billion spent on the transmission and distribution network over the past 10 years.

Earnings will probably fall short of 2003's results. In addition to the dilutive effect of more shares outstanding, pension costs will be higher, interest expense will be up because of the issuance of long-term debt, and property taxes will increase in the second half. Despite the positive effect of higher gas and steam rates, we estimate a 6% decline in 2004 earnings, to $2.65 a share. An expected electric rate increase suggests an improved performance next year. The stock is untimely.

Conservative utility investors should consider these shares. Con Edison carries our highest Financial Strength rating of A++. What's more, the yield is a full percentage point above the group norm, and dividend growth prospects to 2007-2009 are about average.

Arthur H. Medalie *December 3, 2004*

(A) EPS diluted. Excl. nonrecur.: '02, (11¢); '03, (45¢). Next egs. report due late Jan.
(B) Dividends historically paid in mid-Mar., mid-June, mid-Sept., and mid-Dec. ■ Div'd reinvest. plan avail. (C) Includes intangibles. In '03: $11.92/sh. (D) Rate base: net original cost. Rate all'd elec. common equity: '87, 12.9%; earned on '03 average common equity: 10.2%. Regulatory Climate: Average.

Company's Financial Strength	A++
Stock's Price Stability	95
Price Growth Persistence	55
Earnings Predictability	90

DOMINION RES. NYSE-D

RECENT PRICE 67.25 | P/E RATIO 15.3 (Trading: 17.7 / Median: 15.0) | RELATIVE P/E RATIO 0.81 | DIV'D YLD 4.0% | VALUE LINE

TIMELINESS 4 Raised 8/6/04
SAFETY 2 Raised 9/11/98
TECHNICAL 3 Lowered 9/24/04
BETA .85 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	90	(+35%)	11%
Low	65	(-5%)	4%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	2	8	0	0	0
to Sell	0	0	0	0	2	9	0	0	0

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	281	281	245
to Sell	214	210	234
Hld's(000)	182420	180683	196066

	High:	49.4	45.4	41.6	44.4	42.9	48.9	49.4	67.9	70.0	67.1	65.9	67.6
	Low:	38.4	34.9	34.9	36.9	33.3	37.8	36.6	34.8	55.1	35.4	51.7	60.8

LEGENDS
— 1.06 x Dividends p sh divided by Interest Rate
···· Relative Price Strength
3-for-2 split 1/02
Options: Yes
Shaded area indicates recession

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	10.0	12.6
3 yr.	20.9	49.3
5 yr.	57.1	66.7

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
	22.72	24.52	22.62	23.83	23.14	26.37	26.05	26.37	26.72	40.88	31.30	29.63	37.67	39.89	33.16	37.16	*40.15*	*42.55*	Revenues per sh	*49.00*
	6.36	5.82	6.08	6.38	6.04	6.61	6.33	6.00	6.44	7.78	5.97	7.35	7.43	7.84	8.90	7.94	*8.45*	*9.90*	"Cash Flow" per sh	*11.75*
	3.01	2.76	2.75	2.94	2.66	3.12	2.81	2.45	2.65	3.00	1.72	2.99	2.50	2.97	4.82	3.91	*4.30*	*5.10*	Earnings per sh [A]	*6.00*
	2.07	2.15	2.23	2.31	2.40	2.48	2.55	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	*2.60*	*2.68*	Div'd Decl'd per sh [B] ▪	*2.92*
	5.62	6.12	5.19	4.58	4.37	4.24	3.83	3.28	2.69	3.45	3.21	4.32	5.63	4.62	4.35	10.41	*7.85*	*8.10*	Cap'l Spending per sh	*9.00*
	21.91	22.67	23.41	24.41	25.22	26.38	26.60	26.88	27.17	26.84	27.34	25.50	28.45	31.61	33.15	32.42	*33.75*	*36.20*	Book Value per sh [C]	*45.00*
	147.17	150.91	154.79	158.85	163.84	168.12	172.41	176.41	181.22	187.80	194.46	186.32	245.80	264.70	308.10	325.00	*335.00*	*335.00*	Common Shs Outst'g [D]	*335.00*
	9.5	10.5	10.9	11.3	14.3	14.3	13.8	15.4	14.8	12.5	24.6	14.5	19.4	20.9	12.0	15.2	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*13.0*
	.79	.79	.81	.72	.87	.84	.91	1.03	.93	.72	1.28	.83	1.26	1.07	.66	.88			Relative P/E Ratio	*.85*
	7.2%	7.4%	7.4%	7.0%	6.3%	5.6%	6.6%	6.9%	6.6%	6.9%	6.1%	5.9%	5.3%	4.1%	4.4%	4.3%			Avg Ann'l Div'd Yield	*3.7%*
	4491.1	4651.7	4842.3	7677.6	6086.2	5520.0	9260.0	10558	10218	12078	*13450*	*14250*	Revenues ($mill)	*16400*
	520.4	469.1	514.7	603.7	400.0	639.0	624.0	775.0	1378.0	1261.0	*1425*	*1740*	Net Profit ($mill)	*2050*
	24.7%	28.0%	29.2%	26.4%	29.0%	29.4%	31.7%	38.4%	33.1%	34.9%	*38.5%*	*38.5%*	Income Tax Rate	*38.5%*
	2.0%	2.4%	.9%	.3%	.3%	4.7%	3.5%	5.3%	6.9%	7.9%	*5.0%*	*4.0%*	AFUDC % to Net Profit	*4.0%*
	46.6%	45.3%	45.1%	54.1%	44.2%	55.1%	58.3%	60.2%	56.2%	59.4%	*57.5%*	*54.0%*	Long-Term Debt Ratio	*50.5%*
	45.3%	46.6%	47.0%	37.9%	46.4%	37.8%	38.9%	38.0%	42.7%	39.7%	*41.5%*	*45.0%*	Common Equity Ratio	*48.5%*
	10113	10178	10476	13311	11461	12582	17987	22003	23927	26571	*27175*	*26925*	Total Capital ($mill)	*30900*
	10245	10322	10509	12533	10637	10764	14849	18681	20257	25850	*27125*	*28325*	Net Plant ($mill)	*32200*
	6.9%	6.4%	6.6%	6.6%	5.7%	6.8%	5.9%	5.3%	7.7%	6.5%	*7.0%*	*8.0%*	Return on Total Cap'l	*8.0%*
	9.6%	8.4%	9.0%	9.9%	6.3%	11.3%	8.3%	8.9%	13.2%	11.7%	*12.5%*	*14.0%*	Return on Shr. Equity	*13.5%*
	10.5%	9.0%	9.6%	11.0%	6.3%	12.0%	8.0%	9.0%	13.3%	11.8%	*12.5%*	*14.0%*	Return on Com Equity [E]	*13.5%*
	1.0%	NMF	.2%	1.5%	NMF	1.7%	NMF	1.2%	6.3%	4.0%	*5.0%*	*6.5%*	Retained to Com Eq	*7.0%*
	91%	105%	98%	87%	NMF	88%	109%	87%	54%	67%	*61%*	*53%*	All Div'ds to Net Prof	*50%*

CAPITAL STRUCTURE as of 6/30/04
Total Debt $17298.0 mill. Due in 5 Yrs $8169.0 mill.
LT Debt $15479.0 mill. LT Interest $913.0 mill.
Incl. $1397.0 mill. mandatorily redeemable preferred securities of subsidiary trusts.
(LT interest earned: 2.9x)
Leases, Uncapitalized Annual rentals $70.0 mill.
Pension Assets-12/03 $3.73 bill. Oblig. $3.11 bill.
Pfd Stock $257.0 mill. Pfd Div'd $16.0 mill.
1,340,140 shs. $4.04-$7.05, $100 liq. pref., redeemable at $101.00-$112.50/sh.; 2,500,000 var. rate Money Market Pfd. shs. Excl. pfd. due within 1 year.
Common Stock 330,227,655 shs.
MARKET CAP: $22 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	-1.2	+4.9	+.5
Avg. Indust. Use (MWH)	13964	14584	14814
Avg. Indust. Revs. per KWH (¢)	4.40	NA	NA
Capacity at Peak (Mw)	*18000*	*18000*	*18000*
Peak Load, Summer (Mw)	16500	17084	16349
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.8	+2.0	+1.6
Fixed Charge Cov. (%)	198	273	257

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.0%	2.0%	*5.0%*
"Cash Flow"	2.5%	4.0%	*6.0%*
Earnings	3.0%	9.5%	*7.5%*
Dividends	.5%	--	*2.0%*
Book Value	2.5%	3.5%	*6.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	3198	2309	2544	2507	10558
2002	2634	2332	2545	2707	10218
2003	3579	2630	2853	3016	12078
2004	3879	3040	3292	*3239*	*13450*
2005	*4050*	*3250*	*3500*	*3450*	*14250*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.65	.72	1.37	.25	2.97
2002	1.20	.97	1.54	1.11	4.82
2003	1.46	.84	1.05	.52	3.91
2004	1.39	.81	1.08	*1.02*	*4.30*
2005	*1.40*	*.90*	*1.45*	*1.35*	*5.10*

Calendar	QUARTERLY DIVIDENDS PAID [B] ▪ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.645	.645	.645	.645	2.58
2001	.645	.645	.645	.645	2.58
2002	.645	.645	.645	.645	2.58
2003	.645	.645	.645	.645	2.58
2004	.645	.645	.645	.665	

BUSINESS: Dominion Resources, Inc. (DRI) is a holding company for Virginia Power, which serves 2.3 million customers in Virginia and northeastern NC. Acquired Consolidated Natural Gas (1.7 million customers in OH, PA, WV) 1/00. Nonutility operations include independent power production and gas & oil production. Electric revenue breakdown, '03: residential, 47%; commercial, 30%; industrial, 10%; other, 13%. Generating sources, '03: coal, 39%; nuclear, 29%; oil, 5%; other, 4%; purchased, 23%. Fuel costs: 32% of revs. '03 deprec. rate: 3.6%. Has 16,700 employees, 400,000 common stockholders. Chairman & CEO: Thos. E. Capps. President & COO: Thomas F. Farrell II. Inc.: VA. Address: P.O. Box 26532, Richmond, VA 23261-6532. Tel.: 804-819-2000. Internet: www.dom.com.

Dividend growth has resumed at Dominion Resources. In accordance with the plans that the company had announced, the board of directors raised the quarterly dividend by $0.02 a share, to $0.665, in mid-October. In early 2005, the board plans to boost the quarterly disbursement to $0.67 a share, which would produce an $0.08 increase for the full year. Dominion expects to continue to raise the dividend by $0.08 a share annually beyond 2005. We believe this goal is achievable, in view of the company's improving finances and its moderate payout ratio. But . . .

We have reduced our share-earnings estimates for 2004 and 2005 by $0.45 and $0.05, respectively. Third-quarter earnings were below our estimate due, in part, to mild weather and the effects of Hurricane Ivan on oil and gas production. We have cut our fourth-quarter estimate due to the cost of a buyout (an estimated $90 million-$110 million after taxes) of contracts with a nonutility generator (NUG). Because Dominion excludes the hurricane-related costs and the NUG buyout costs from its earnings target of $4.68-$4.75 a share, our $4.30 estimate is well below the company's guidance. In 2005, higher income from oil and gas production and lower fuel costs should help earnings. Our estimate is the midpoint of the company's goal of $5.00-$5.20 a share. The stock is ranked 4 (Below Average) for Timeliness.

Some plant acquisitions are pending. Dominion has agreed to pay $536 million, plus an adjustment for inventory and capital spending estimated at $120 million, for 2,839 mw of coal-, oil-, and gas-fired generating assets in New England. The transaction is expected to close in March. Dominion plans to finance most of the purchase price with a forward equity sale of common shares at $65.20 each. The deal should be accretive to share earnings in 2005, but our presentation will not reflect it until after it has closed. An agreement to pay $220 million for the 545-megawatt Kewaunee nuclear plant in Wisconsin was denied by the state commission. The companies will probably seek reconsideration.

The yield and total-return potential to 2007-2009 are a cut above the industry averages.

Paul E. Debbas, CFA *December 3, 2004*

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	65
Earnings Predictability	60

(A) Excl. nonrecurring gain (losses): '97, (85¢); '98, $1.03; '99, (11¢); '00, (64¢) net; '01, (83¢); '03, ($2.91) net; '04, (12¢) net; loss from discontinued ops.: '04, 5¢. '01 & '03 earnings don't add due to change in shares. Next earnings report due late Jan. (B) Div'ds historically paid in mid-Mar., June, Sept., and Dec. ▪ Div'd reinvest. plan avail. (C) Incl. deferred charges. In '03: $21.76/sh. (D) In mill., adj. for split. (E) Rate base: Net orig. cost, adj. Rate all'd on com. eq. in '99: none specified; earned on avg. com. eq., '03: 11.4%. Regulatory Climate: Avg.

GREEN MTN. POWER NYSE-GMP

RECENT PRICE 27.20 | P/E RATIO 12.5 (Trailing: 12.9 Median: 12.0) | RELATIVE P/E RATIO 0.66 | DIV'D YLD 3.5% | VALUE LINE

TIMELINESS 3 Raised 8/13/04
SAFETY 3 Raised 9/7/01
TECHNICAL 3 Lowered 12/3/04
BETA .60 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+10%)	7%
Low	19	(-30%)	-3%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	5	2	1	0	3	0	0
to Sell	0	2	6	2	1	0	3	0	0

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	30	23	28
to Sell	13	20	18
Hld's(000)	1916	1932	2029

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
High:	36.6	31.3	28.6	29.1	26.3	20.1	14.5	13.0	19.5	21.1	23.8	27.2								
Low:	30.8	23.4	23.9	22.8	17.6	10.0	7.1	6.6	11.1	15.8	19.0	22.6								
	34.79	38.83	39.06	33.33	32.91	32.46	31.68	33.30	35.54	34.52	34.69	46.41	49.82	49.86	55.42	55.72	*44.25*	*45.20*	Revenues per sh	*46.75*
	3.88	3.95	4.02	3.87	4.32	4.05	4.47	5.12	5.41	4.69	2.24	3.45	2.69	4.42	5.14	4.79	*4.80*	*4.90*	"Cash Flow" per sh	*5.05*
	2.41	2.36	2.29	2.45	2.54	2.20	2.23	2.26	2.22	1.57	d.80	.46	d.06	1.88	1.96	2.01	*2.15*	*2.20*	Earnings per sh (A)	*2.40*
	1.89	1.95	2.00	2.04	2.08	2.11	2.12	2.12	2.12	1.61	.96	.55	.55	.55	.60	.76	*.88*	*.98*	Div'd Decl'd per sh (B)●	*1.28*
	3.84	5.44	3.79	3.42	3.47	3.52	2.89	3.16	3.48	3.16	2.05	1.70	2.49	2.28	3.94	3.30	*4.20*	*3.85*	Cap'l Spending per sh	*2.80*
	18.37	18.73	19.03	20.30	20.99	21.42	21.66	21.94	22.15	22.02	20.09	18.60	16.53	17.81	18.51	19.85	*20.65*	*21.25*	Book Value per sh (C)	*23.00*
	3.70	3.71	3.78	4.31	4.41	4.54	4.68	4.85	5.04	5.20	5.31	5.41	5.57	5.69	4.95	5.03	*5.15*	*5.20*	Common Shs Outst'g (E)	*5.35*
	10.1	10.3	10.5	10.8	12.2	15.6	12.1	11.7	11.6	14.2	--	22.6	--	8.5	9.3	10.7	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*10.0*
	.84	.78	.78	.69	.74	.92	.79	.78	.73	.82	--	1.29	--	.44	.51	.62			Relative P/E Ratio	*.65*
	7.7%	8.0%	8.3%	7.7%	6.7%	6.2%	7.8%	8.0%	8.2%	7.2%	6.4%	5.3%	6.6%	3.4%	3.3%	3.5%			Avg Ann'l Div'd Yield	*5.3%*
							148.2	161.5	179.0	179.3	184.3	251.0	277.3	283.5	274.6	280.5	*228*	*235*	Revenues ($mill)	*250*
							11.0	*11.5*	*12.0*	*9.4*	*d2.9*	*3.6*	*.7*	*11.8*	*11.4*	*10.3*	*11.0*	*11.5*	Net Profit ($mill)	*13.0*
							32.9%	32.7%	35.1%	43.2%	--	22.9%	--	37.1%	34.7%	33.1%	*33.5%*	*34.0%*	Income Tax Rate	*35.5%*
							7.3%	5.0%	5.4%	7.1%	--	6.2%	72.2%	3.4%	2.9%	6.3%	*6.5%*	*6.0%*	AFUDC % to Net Profit	*4.5%*
							43.6%	46.7%	44.3%	43.5%	43.9%	43.9%	42.9%	41.4%	51.7%	49.5%	*48.0%*	*47.0%*	Long-Term Debt Ratio	*48.0%*
							51.8%	49.2%	47.5%	49.0%	48.7%	49.8%	50.3%	52.2%	48.3%	50.5%	*52.0%*	*53.0%*	Common Equity Ratio	*52.0%*
							195.7	216.3	234.8	233.7	219.0	202.3	183.2	194.0	190.1	197.9	*205*	*210*	Total Capital ($mill)	*235*
							176.0	182.0	189.9	196.7	195.6	192.9	194.7	196.9	203.5	226.9	*235*	*250*	Net Plant ($mill)	*285*
							7.4%	6.8%	6.6%	5.6%	.3%	3.4%	2.2%	7.6%	7.4%	7.0%	*7.0%*	*7.0%*	Return on Total Cap'l	*7.0%*
							10.0%	10.0%	9.1%	7.1%	NMF	3.2%	.7%	10.4%	12.4%	10.3%	*10.5%*	*10.5%*	Return on Shr. Equity	*10.5%*
							10.1%	10.1%	9.8%	7.0%	NMF	2.4%	NMF	10.7%	12.3%	10.3%	*10.5%*	*10.5%*	Return on Com Equity (D)	*10.5%*
							.5%	.6%	.5%	NMF	NMF	NMF	NMF	7.7%	8.7%	6.5%	*6.0%*	*5.5%*	Retained to Com Eq	*5.0%*
							95%	94%	96%	102%	NMF	113%	NMF	34%	30%	37%	*41%*	*45%*	All Div'ds to Net Prof	*54%*

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	17.9	12.6
3 yr.	75.7	49.3
5 yr.	216.4	66.7

Target Price Range 2007 | 2008 | 2009

CAPITAL STRUCTURE as of 9/30/04
Total Debt $98.0 mill. *Due in 5 Yrs* $14.0 mill.
LT Debt $98.0 mill. LT Interest $6.5 mill.
Incl. $5.0 mill. capitalized leases.
(LT interest earned: 3.4x)

Leases, Uncapitalized None
Pension Assets-12/03 $27.9 mill. Oblig. $34.0 mill.

Pfd Stock None

Common Stock 5,121,479 shs. as of 10/29/04
(5.25 mill. fully diluted shs.)
MARKET CAP: $150 million (Small Cap)

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	Nil	-.3	-1.1
Avg. Indust. Use (MWH)	31768	31499	25811
Avg. Indust. Revs. per KWH (¢)	7.70	7.31	7.41
Capacity at Peak (Mw)	408.0	406.9	393.9
Peak Load, Summer (Mw)	341.2	342.0	330.2
Annual Load Factor (%)	70.1	70.0	71.1
% Change Customers (yr-end)	+1.2	+.9	+1.2
Fixed Charge Cov. (%)	257	327	279

ANNUAL RATES

	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
of change (per sh)			
Revenues	5.0%	9.0%	*-2.5%*
"Cash Flow"	1.5%	3.0%	*1.0%*
Earnings	-2.0%	14.5%	*3.5%*
Dividends	-11.0%	-16.5%	*12.5%*
Book Value	-1.0%	-2.5%	*3.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	74.8	67.5	76.0	65.2	283.5
2002	68.9	65.1	73.5	67.1	274.6
2003	72.9	64.5	72.0	71.1	280.5
2004	63.1	54.6	54.9	*55.4*	*228*
2005	*65.0*	*55.0*	*57.0*	*57.0*	*235*

Calendar	EARNINGS PER SHARE (A) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.51	.50	.58	.29	1.88
2002	.57	.32	.52	.55	1.96
2003	.80	.22	.59	.40	2.01
2004	.72	.34	.65	*.44*	*2.15*
2005	*.74*	*.35*	*.66*	*.45*	*2.20*

Calendar	QUARTERLY DIVIDENDS PAID ● (B) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.138	.138	.138	.138	.55
2001	.138	.138	.138	.138	.55
2002	.138	.138	.138	.19	.60
2003	.19	.19	.19	.19	.76
2004	.22	.22	.22		

BUSINESS: Green Mountain Power Corp. supplies electricity to north-central, and parts of southern and southeastern Vermont. Rev. mix ('03): resid'l, 26.9%; small comm'l & ind'l, 26.4%; large comm'l. & ind'l., 17.1%; other utils, 28.1%; other, 1.5%. Fuel ('03): hydro, 35.4% (incl. H-Q purch.); nuclear, 37.4% (Vermont Yankee); wood, 3.5%; oil, 2.7%; gas, 1.3%; wind, .5%; mkt purch., 19.2%. Has 28.4% interest in Vermont Electric Power Co. and a 33.6% stake in Vermont Yankee Nuclear Power Corp. Fuel and purch. pwr costs: 70.3% of revs. '03 deprec. rate: 4.1%. Has 196 employees, 5,120 stockholders of rec. Chrmn: N.L. Brue. Pres. & CEO: C.L. Dutton. Inc.: VT. Addr.: 163 Acorn Lane, Colchester, VT 05446. Tel.: 802-655-8455. Web: www.greenmountainpower.biz.

Green Mountain Power has filed for a rate hike. In December, 2003, the Vermont Public Service Board (VPSB) approved a rate settlement between GMP and the state Department of Public Service. The settlement satisfied a cost-of-service review requirement in the 2002 sale of the Vermont Yankee nuclear plant. Electricity rates were left unchanged for 2004, and the company was authorized to seek increases of 1.9% for 2005 and 0.9% for 2006. We look for the VPSB to soon approve the 2005 requested hike since it does not involve any controversial issues. GMP needs additional revenues to recover operating, maintenance, employment, and environmental clean-up costs. Approval would ensure that the utility earns its allowed return on common equity of 10.5%. As 2004 draws to a close, GMP appears on track to achieve its allowed rate of return, thanks to ongoing cost-control efforts and the carryover of previously deferred revenues. Our 2005 share-net estimate factors in the proposed 1.9% hike.

The capital structure is well balanced. At the end of the recently concluded September quarter, the company's debt-to-total capital and common equity-to-total capital ratios stood at 48% and 52%, respectively. These ratios are suitable for a pure power distribution company such as GMP. Over the next five years, just $14 million in debt will mature, and that is in 2006. Management will probably issue some $30 million in new debt that year to help rebalance the capital structure and secure funding for an investment in a transmission line planned by the Vermont Electric Company. (This investment offers the potential for increased regulated earnings at the federal level.) GMP's debt and equity ratios should stay close to the current levels over the coming 3 to 5 years.

Green Mountain Power stock's total-return potential to 2007-2009 appears subpar compared to the industry average. Our projected return for the electrics over this period is a relatively unexciting 4% a year. Steady, predictable earnings growth and a low payout ratio suggest that GMP's dividend advance will be greater than the sector pace, but the recent share price seems to already reflect this positive prospect.

David M. Reimer *December 3, 2004*

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistance	25
Earnings Predictability	15

(A) Basic earnings. Next earnings report due early Feb. Excludes gain (losses) from discontinued operations: '99, ($1.25); '00, ($1.19); '01, (3¢); '03, 1¢ (B) Dividends historically paid in late Mar., June, Sep., and Dec. ● Dividend reinvestment plan available. (C) Includes deferred charges. In '03: $11.05/sh. (D) Rate base determination: net original cost. Rate allowed on common equity in '03: 10.5%. Earned on average common equity in '03: 10.8%. Regulatory Climate: Average. (E) In millions.

KEYSPAN CORP. NYSE-KSE

RECENT PRICE 38.84 | P/E RATIO 14.0 (Trailing: 13.2 Median: 14.0) | RELATIVE P/E RATIO 0.81 | DIV'D YLD 4.6% | VALUE LINE

TIMELINESS 3 Raised 8/13/04
SAFETY 2 Lowered 3/26/99
TECHNICAL 2 Raised 8/27/04
BETA .75 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+30%)	10%
Low	35	(-10%)	2%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	1	3	2	4	0	0	0
to Sell	0	0	1	3	2	4	0	0	0

Institutional Decisions

	3Q2003	4Q2003	1Q2004
to Buy	164	172	164
to Sell	121	113	107
Hld's(000)	77907	78367	80527

	High:	28.5	28.6	29.6	32.6	37.1	37.6	31.3	43.6	41.9	38.2	38.1	39.0
	Low:	21.6	21.5	22.0	24.9	26.1	25.4	22.5	20.2	29.1	27.4	31.0	33.9

LEGENDS
1.00 x Dividends p sh divided by Interest Rate
Relative Price Strength
3-for-2 split 7/93
Options: Yes
Shaded area indicates recession

old KeySpan | new KeySpan

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	18.6	13.4
3 yr.	37.5	29.3
5 yr.	63.6	54.2

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
25.51	26.71	26.64	23.43	24.74	25.99	28.13	24.93	28.72	29.12	13.20	22.07	37.56	47.57	41.92	43.31	*43.40*	*46.60*	Revenues per sh	*55.40*
2.55	2.64	2.62	2.38	3.03	3.04	3.29	3.35	3.54	4.27	.45	3.57	4.51	5.72	6.36	6.22	*7.00*	*7.25*	"Cash Flow" per sh	*8.30*
1.66	1.68	1.62	1.45	1.35	1.73	1.85	1.90	1.96	2.12	d1.34	1.62	2.10	1.72	2.75	2.62	*2.75*	*2.85*	Earnings per sh [B]	*3.45*
1.15	1.19	1.23	1.27	1.29	1.32	1.35	1.39	1.42	1.46	1.50	1.78	1.78	1.78	1.78	1.78	*1.78*	*1.78*	Div'ds Decl'd per sh [C n]	*1.90*
3.46	4.30	3.51	3.44	3.95	4.37	4.15	4.36	6.04	5.60	5.19	5.42	4.64	7.60	7.96	6.34	*6.00*	*6.70*	Cap'l Spending per sh	*7.70*
12.77	13.36	13.68	14.37	14.55	15.54	16.27	16.94	18.17	19.09	23.18	20.28	20.65	20.73	20.67	22.94	*24.45*	*25.00*	Book Value per sh [D]	*29.25*
35.23	36.29	37.30	42.28	43.45	46.38	47.59	48.79	49.86	50.77	130.42	133.87	136.36	139.43	142.42	159.66	*160.40*	*161.00*	Common Shs Outst'g [E]	*162.50*
9.4	10.1	11.9	13.1	15.1	14.3	13.7	12.7	13.7	13.8	--	16.8	14.8	20.8	12.7	13.1	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	*12.5*
.78	.76	.88	.84	.92	.84	.90	.85	.86	.80	--	.96	.96	1.07	.69	.76			Relative P/E Ratio	*.85*
7.4%	7.0%	6.4%	6.7%	6.4%	5.3%	5.3%	5.8%	5.3%	5.0%	4.8%	6.5%	5.7%	5.0%	5.1%	5.2%			Avg Ann'l Div'd Yield	*4.6%*
1338.6	1216.3	1432.0	1478.2	1721.9	2954.6	5121.5	6633.1	5970.7	6915.2	*6960*	*7270*	Revenues ($mill) [A]	*9000*
87.4	91.8	97.2	106.1	d166.9	258.6	300.8	243.7	397.4	424.2	*450*	*470*	Net Profit ($mill)	*565*
31.8%	32.0%	28.9%	35.0%	--	34.5%	41.8%	46.4%	36.2%	39.5%	*38.0%*	*38.0%*	Income Tax Rate	*39.0%*
6.5%	7.6%	6.8%	7.2%	NMF	8.8%	5.9%	3.7%	6.7%	6.1%	*6.5%*	*6.5%*	Net Profit Margin	*6.3%*
47.3%	46.4%	43.8%	43.5%	31.8%	37.5%	59.6%	61.2%	63.3%	60.0%	*56.5%*	*56.5%*	Long-Term Debt Ratio	*54.5%*
52.2%	53.2%	55.8%	56.5%	59.4%	60.6%	39.2%	37.7%	35.7%	39.1%	*42.5%*	*42.5%*	Common Equity Ratio	*44.5%*
1482.8	1553.8	1624.4	1714.1	5089.9	4482.1	7175.0	7672.3	8252.5	9356.9	*9250*	*9460*	Total Capital ($mill)	*10650*
1405.3	1512.6	1698.1	1810.6	3778.3	4240.0	6358.3	6605.9	7217.6	8894.3	*7000*	*7300*	Net Plant ($mill)	*8000*
7.5%	7.5%	7.4%	7.3%	NMF	7.1%	5.3%	4.5%	6.2%	5.8%	*6.5%*	*6.5%*	Return on Total Cap'l	*7.0%*
11.2%	11.0%	10.7%	10.9%	NMF	9.2%	10.4%	8.2%	13.1%	11.3%	*11.5%*	*11.5%*	Return on Shr. Equity	*11.5%*
11.2%	11.1%	10.7%	10.9%	NMF	8.2%	10.0%	8.2%	13.3%	11.4%	*11.5%*	*11.5%*	Return on Com Equity	*12.0%*
3.0%	2.9%	2.9%	3.3%	NMF	NMF	1.4%	NMF	4.8%	3.9%	*4.0%*	*4.5%*	Retained to Com Eq	*5.0%*
73%	74%	73%	70%	NMF	110%	86%	103%	65%	66%	*65%*	*62%*	All Div'ds to Net Prof	*56%*

CAPITAL STRUCTURE as of 6/30/04
Total Debt $5.3 bill. Due in 5 Yrs $2.7 bill.
LT Debt $5.2 bill. LT Interest $370.0 mill.
(total interest coverage: 3.1x)

Pension Assets-12/03 $1.9 bill. Oblig. $2.3 bill.

Pfd Stock $83.3 mill. Pfd Div'd $5.8 mill.

Common Stock 160,176,000 shs.

MARKET CAP: $6.2 billion (Large Cap)

CURRENT POSITION ($MILL.)	2002	2003	6/30/04
Cash Assets	170.6	205.8	818.1
Other	2045.9	2181.1	1702.6
Current Assets	2216.5	2386.9	2520.7
Accts Payable	1061.6	1141.6	738.1
Debt Due	927.1	483.4	56.5
Other	231.5	223.8	266.1
Current Liab.	2220.2	1848.8	1060.7
Fix. Chg. Cov.	289%	315%	*300%*

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	6.0%	13.5%	*4.0%*
"Cash Flow"	8.0%	17.0%	*5.5%*
Earnings	4.5%	21.0%	*6.5%*
Dividends	3.0%	4.0%	*1.0%*
Book Value	4.0%	1.5%	*5.5%*

Calendar	QUARTERLY REVENUES ($ mill.) [A] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	2575.1	1339.3	1102.4	1616.3	6633.1
2002	1871.6	1216.1	1079.8	1803.2	5970.7
2003	2512.5	1408.2	1131.8	1862.7	6915.2
2004	2595.6	1365.8	*1100*	*1898.6*	*6960*
2005	*2650*	*1450*	*1160*	*2010*	*7270*

Calendar	EARNINGS PER SHARE [A B] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	1.61	d.06	d.26	.43	1.72
2002	1.51	.20	.02	1.02	2.75
2003	1.53	d.05	.07	1.07	2.62
2004	1.53	.28	*d.06*	*1.00*	*2.75*
2005	*1.55*	*.25*	*.02*	*1.03*	*2.85*

Calendar	QUARTERLY DIVIDENDS PAID [A C n] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.445	.445	.445	.445	1.78
2001	.445	.445	.445	.445	1.78
2002	.445	.445	.445	.445	1.78
2003	.445	.445	.445	.445	1.78
2004	.445	.445	.445		

BUSINESS: KeySpan Corp. is a holding company created 5/98, via the merger of KeySpan Energy (formerly Brooklyn Union) and Long Island Lighting. Acq. Eastern Enterprises 11/8/00, making KeySpan the largest gas distributor in the Northeast, serving most of New York City and nearby Long Island, and New England. Has 2.5 mill. gas meters; its market is mainly one-family homes and apartments. Also generates electricity and operates transmission/distr. sys. by contract with LI. Power Author. Parent owns 23.5% of Houston Exploration; 20% of Iroquois Pipeline. Non-regulated subs. market gas supplies, sell ind'l energy mgmt. svcs. Has 13,000 empls. Chmn.: R.B. Catell. Inc.: NY. Address: 1 MetroTech Center, Brooklyn, NY 11201. Telephone: 718-403-1000. Web: www.keyspanenergy.com.

KeySpan is improving its financial profile. As a largely state-regulated enterprise, KeySpan has to operate with a balance sheet leveraged with senior capital. Gas distribution and power production are very capital-intensive businesses. Since the larger gas system, in particular, has no direct competition, regulators require that it finance heavily with debt—on which the interest rate is much less than the return allowed on equity capital—in order to keep charges to ratepayers as low as possible. But KeySpan, overall, has long operated with too much debt ahead of common equity, making the stock a little riskier and precluding a rising dividend. Management has been addressing the problem, and this year it has taken bolder steps to ease the pressure. In several complex financial moves, including the sale of much of its stake in Houston Exploration and a sale-and-leaseback arrangement covering the Ravenswood (New York City) power facility, KeySpan raised enough funds to effect a sizable paydown of debt while adding a bit to shareholders' equity. **The stock remains a good choice for income.** KeySpan's capitalization ratios are the best they've been in many years. We expect management will keep at it to gradually lower the debt component towards a more prudent 50% via asset sales. There is the possibility of some equity financing down the road, though management would have to be careful not to dilute the regulated share earnings. Meanwhile, this year's actions and the prospect of better operating earnings for 2004 from gas distribution, power production, and miscellaneous energy-related services should afford the current quarterly dividend an ample safeguard.

The current dividend yield is moderately above the gas-stock average, reflecting the absence of a growing payout. In general, gas-utility stocks have lately been getting a stronger underpinning. KeySpan's higher market value has narrowed its yield premium. That might suggest investors believe the company's finances are closer to providing the margin of safety needed to permit a dividend hike. Our take for now is that management may want to play it cautiously and defer raising the payout for several more quarters.

Gerald Holtzman *September 17, 2004*

(A) Data for former KeySpan Energy through '97 (years end 9/30); new KeySpan Corp. from '98 on a calendar-year basis.(B) Diluted shs. Excl. nonrecur. gains (charges): '90, ($0.19); '96, $0.52; '97, $0.16; '03, ($0.23); '04, $0.53. Excl. gain (loss) discont. ops.: '00, ($0.02); '01, ($0.14); '02, ($0.14). Next egs. report due late Oct. (C) Dividends historically paid in February, May, August, and November. n Div'd reinvestment plan available. (D) Includes deferred charges. At 12/31/03: $19.40 /sh. (E) In millions, adjusted for split.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	50
Earnings Predictability	10

MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 17.60 | TRAILING P/E RATIO 30.3 | RELATIVE P/E RATIO 1.57 | DIV'D YLD 3.9% | VALUE LINE 4706

RANKS
PERFORMANCE 3 Average
Technical 3 Average
SAFETY 2 Above Average
BETA .50 (1.00 = Market)

Financial Strength B++
Price Stability 95
Price Growth Persistence 70
Earnings Predictability 70

LEGENDS
12 Mos Mov Avg
Rel Price Strength
3-for-2 split 1/02
4-for-3 split 11/03
Shaded area indicates recession

© VALUE LINE PUBLISHING, INC.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2008
SALES PER SH	4.52	4.72	4.39	5.39	5.39	5.87	5.96	6.12	—	
"CASH FLOW" PER SH	.94	1.02	1.02	1.19	.99	1.18	1.20	1.15	—	
EARNINGS PER SH	.60	.67	.71	.75	.51	.66	.73	.61	.67[A,B]	.74[C]/NA
DIV'DS DECL'D PER SH	.55	.57	.58	.60	.61	.62	.63	.65	—	
CAP'L SPENDING PER SH	.73	1.20	2.68	2.33	1.32	1.25	1.59	1.67	—	
BOOK VALUE PER SH	5.85	6.00	6.80	6.95	6.98	7.11	7.39	7.60	—	
COMMON SHS OUTST'G (MILL)	8.41	8.54	9.82	10.00	10.11	10.17	10.36	10.48	—	
AVG ANN'L P/E RATIO	14.4	13.4	15.2	17.8	28.7	24.6	23.5	30.0	26.3	23.8/NA
RELATIVE P/E RATIO	.90	.77	.79	1.00	1.87	1.25	1.28	1.71	—	
AVG ANN'L DIV'D YIELD	6.4%	6.3%	5.4%	4.4%	4.2%	3.6%	3.7%	3.5%	—	
SALES ($MILL)	38.0	40.3	43.1	53.5	54.5	59.6	61.9	64.1	—	
OPERATING MARGIN	36.0%	37.2%	37.0%	33.9%	32.2%	47.2%	47.1%	44.0%	—	
DEPRECIATION ($MILL)	2.9	3.1	3.8	4.3	4.9	5.3	5.0	5.6	—	
NET PROFIT ($MILL)	5.2	5.9	6.5	7.9	5.3	7.0	7.8	6.6	—	
INCOME TAX RATE	32.8%	34.9%	31.5%	28.6%	33.1%	34.8%	33.3%	32.8%	—	
NET PROFIT MARGIN	13.6%	14.5%	15.1%	14.7%	9.7%	11.7%	12.5%	10.3%	—	
WORKING CAP'L ($MILL)	2.0	d2.9	14.6	6.8	d2.7	d.9	d9.3	d13.3	—	
LONG-TERM DEBT ($MILL)	53.0	52.9	78.0	82.3	81.1	88.1	87.5	97.4	—	
SHR. EQUITY ($MILL)	51.9	56.2	71.7	74.6	74.7	76.4	80.6	83.7	—	
RETURN ON TOTAL CAP'L	6.4%	6.8%	5.7%	6.4%	4.9%	5.6%	6.0%	5.0%	—	
RETURN ON SHR. EQUITY	10.0%	10.4%	9.1%	10.6%	7.1%	9.1%	9.6%	7.9%	—	
RETAINED TO COM EQ	.8%	1.7%	1.8%	2.5%	NMF	5%	-1.3%	NMF	—	
ALL DIV'DS TO NET PROF	92%	85%	81%	78%	121%	94%	87%	106%	—	

Bold figures are consensus earnings estimates and, using the recent price, P/E ratios.

[A] No. of analysts changing earn. est. in last 16 days: 0 up, 0 down, consensus 5-year earnings growth 6.0% per year. [B] Based upon one analyst's estimate. [C] Based upon one analyst's estimate.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Sales	5.5%	2.5%
"Cash Flow"	3.5%	-5.0%
Earnings	0.5%	-16.0%
Dividends	2.5%	2.5%
Book Value	3.5%	3.0%

QUARTERLY SALES ($mill.)

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/02	14.3	15.5	17.0	15.1	61.9
12/31/03	15.0	16.0	17.6	15.5	64.1
12/31/04	15.9	17.8			
12/31/05					

EARNINGS PER SHARE

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/01	.08	.16	.23	.17	.66
12/31/02	.12	.18	.24	.19	.73
12/31/03	.11	.17	.22	.11	.61
12/31/04	.09	.16			
12/31/05					

QUARTERLY DIVIDENDS PAID

Calendar	1Q	2Q	3Q	4Q	Full Year
2001	.155	.155	.155	.158	.62
2002	.158	.158	.158	.161	.64
2003	.161	.161	.161	.165	.65
2004	.165	.165	.165		

INSTITUTIONAL DECISIONS

	4Q'03	1Q'04	2Q'04
to Buy	24	17	19
to Sell	14	15	13
Hld's(000)	1705	1749	1911

ASSETS ($mill.)	2002	2003	6/30/04
Cash Assets	2.9	3.0	3.0
Receivables	9.2	5.7	10.6
Inventory (Avg cost)	1.2	1.4	1.6
Other	7.0	4.3	1.3
Current Assets	20.3	14.4	16.5
Property, Plant & Equip, at cost	258.3	278.4	--
Accum Depreciation	47.9	47.5	--
Net Property	211.4	230.9	237.5
Other	12.9	17.9	17.0
Total Assets	244.6	263.2	271.0
LIABILITIES ($mill.)			
Accts Payable	2.1	4.8	5.4
Debt Due	18.9	13.5	6.6
Other	9.2	9.3	10.0
Current Liab	29.8	27.7	21.0

LONG-TERM DEBT AND EQUITY as of 6/30/04
Total Debt $103.9 mil. Due in 5 Yrs. NA
LT Debt $98.3 mil. Including Cap. Leases NA (50% of Cap'l)
Leases, Uncapitalized Annual rentals NA
Pension Liability $5.1 mil. in '03 vs. $5.3 mil. in '02
Pfd Stock $4.1 mil. Pfd Div'd Paid $.3 mil. (2% of Cap'l)
Common Stock 11,309,496 shares (48% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: Middlesex Water Company, through its subsidiaries, engages in the ownership and operation of regulated water utility systems in central and southern New Jersey, and in Delaware, as well as a regulated wastewater utility in southern New Jersey. Its New Jersey water utility system (the Middlesex System) provides water services to retail customers in central New Jersey. The Middlesex System also provides water service under contract to municipalities in central New Jersey. The company operates the water supply system and wastewater system for the city of Perth Amboy in New Jersey in partnership with its subsidiary, Utility Service Affiliates (Perth Amboy), Inc. Its other New Jersey subsidiaries provide water and wastewater services to residents in Southampton Township. The company's Delaware subsidiaries, comprising Tidewater Utilities, Inc. and Southern Shores Water Company, LLC, offer water services to retail customers in New Castle, Kent, and Sussex Counties. Has 209 employees. C.E.O. & President: J. Richard Tompkins. Inc.: NJ. Address: 1500 Ronson Road, Iselin, NJ 08830. Tel.: (732) 634-1500. Internet: http://www.middlesexwater.com. *A.O.*

October 29, 2004

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 9/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-6.78%	-11.85%	0.42%	20.29%	42.79%

N.W. NAT'L GAS NYSE-NWN

RECENT PRICE 31.89 | P/E RATIO 17.8 (Trailing: 17.4 / Median: 14.) | RELATIVE P/E RATIO 1.03 | DIV'D YLD 4.1% | VALUE LINE

TIMELINESS 5 Lowered 7/30/04
SAFETY 2 New 7/27/90
TECHNICAL 3 Lowered 9/10/04
BETA .65 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+10%)	6%
Low	25	(-20%)	-1%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	1	0	0	1	0
Options	0	2	0	0	1	0	0	0	0
to Sell	0	2	0	0	1	0	0	0	0

Institutional Decisions

	3Q2003	4Q2003	1Q2004
to Buy	50	57	67
to Sell	45	36	38
Hld's(000)	10645	11210	12425

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Target Price Range 2007	2008	2009
High							25.8	24.3	22.8	25.9	31.4	30.8	27.9	27.5	26.8	30.7	31.3	33.0			64
Low							19.0	18.8	18.3	20.8	23.0	24.3	19.5	17.8	21.7	23.5	24.0	27.5			48
																					40
																					32
																					24
																					20
																					16
																					12
																					8
																					6
Cash Flow per sh	17.39	15.22	17.02	16.74	14.10	18.15	18.30	16.02	16.86	15.82	16.77	18.17	21.09	25.78	25.07	23.57	24.25	25.75			30.00
Earnings per sh A	2.79	2.85	3.22	2.57	3.25	3.74	3.50	3.41	3.86	3.72	3.24	3.72	3.68	3.86	3.65	3.85	3.85	4.15			4.75
Div'ds Decl'd per sh B▫	1.33	1.58	1.62	.57	.74	1.74	1.63	1.61	1.97	1.76	1.02	1.70	1.79	1.88	1.62	1.76	1.80	2.05			2.40
Cap'l Spending per sh	1.05	1.07	1.10	1.13	1.15	1.17	1.17	1.18	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.30	1.33			1.45
Book Value per sh C	2.82	3.36	3.85	3.58	3.73	3.61	4.23	3.02	3.70	5.07	4.02	4.78	3.46	3.23	3.11	4.90	3.70	3.70			4.00
Common Shs Outst'g D	11.25	12.04	12.61	12.23	12.41	13.08	13.63	14.55	15.37	16.02	16.59	17.12	17.93	18.56	18.88	19.52	20.60	21.45			23.50
Avg Ann'l P/E Ratio	15.96	17.14	17.41	17.68	19.46	19.77	20.13	22.24	22.56	22.86	24.85	25.09	25.23	25.23	25.59	25.94	27.40	27.75			28.00
Relative P/E Ratio	10.2	9.8	10.2	28.1	27.0	12.9	13.0	12.9	11.7	14.4	26.7	14.5	12.4	12.9	17.2	15.8	Bold figures are Value Line estimates				12.5
Avg Ann'l Div'd Yield	.85	.74	.76	1.79	1.64	.76	.85	.86	.73	.83	1.39	.83	.81	.66	.94	.92					.85
	7.7%	6.9%	6.7%	5.9%	5.7%	5.2%	5.5%	5.7%	5.2%	4.8%	4.5%	5.0%	5.6%	5.1%	4.5%	4.6%					5.0%
Revenues ($mill)							368.3	356.3	380.3	361.8	416.7	455.8	532.1	650.3	641.4	611.3	665	705			850
Net Profit ($mill)							35.5	38.1	46.8	43.1	27.3	44.9	47.8	50.2	43.8	46.0	49.5	56.0			67.0
Income Tax Rate							36.6%	36.8%	36.9%	32.9%	31.0%	35.4%	35.9%	35.4%	34.9%	33.7%	35.0%	35.0%			35.0%
Net Profit Margin							9.6%	10.7%	12.3%	11.9%	6.6%	9.9%	9.0%	7.7%	6.8%	7.5%	7.4%	7.8%			7.9%
Long-Term Debt Ratio							47.9%	43.5%	41.4%	46.0%	45.0%	46.0%	45.1%	43.0%	47.6%	49.7%	48.0%	48.0%			48.0%
Common Equity Ratio							45.1%	50.3%	52.8%	49.0%	50.6%	49.9%	50.9%	53.2%	51.5%	50.3%	52.0%	52.0%			52.0%
Total Capital ($mill)							607.7	643.3	657.4	748.0	815.6	861.5	887.8	880.5	937.3	1006.6	1090	1140			1270
Net Plant ($mill)							654.3	697.2	745.3	827.5	894.7	895.9	934.0	965.0	995.6	1205.9	1280	1320			1325
Return on Total Cap'l							7.6%	7.7%	8.9%	7.4%	5.0%	6.8%	6.7%	6.9%	5.9%	5.7%	6.0%	6.5%			7.0%
Return on Shr. Equity							11.2%	10.5%	12.1%	10.7%	6.1%	9.7%	9.8%	10.0%	8.9%	9.1%	9.5%	9.5%			10.0%
Return on Com Equity							11.8%	10.9%	12.7%	11.0%	6.0%	9.9%	10.0%	10.2%	8.5%	9.0%	9.5%	9.5%			10.0%
Retained to Com Eq							3.3%	3.0%	5.0%	3.6%	NMF	2.8%	3.1%	3.5%	1.9%	2.6%	2.5%	3.5%			4.0%
All Div'ds to Net Prof							74%	74%	63%	70%	118%	74%	70%	67%	79%	72%	72%	65%			60%

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	13.1	13.4
3 yr.	40.0	29.3
5 yr.	—	54.2

© VALUE LINE PUB., INC. 07-09

CAPITAL STRUCTURE as of 6/30/04
Total Debt $505.0 mill. Due in 5 Yrs $50.0 mill.
LT Debt $500.1 mill. LT Interest $34.0 mill.
Incl. $5.6 mill. 7¼% debs. due 3/1/12, each conv. into 50.25 com. shs. at $19.90.
(Total interest coverage: 3.0x)

Pension Assets-12/03 $168.3 mill. Oblig. $205.4 mill.

Pfd Stock None

Common Stock 27,343,860 shs.
MARKET CAP $875 million (Small Cap)

CURRENT POSITION ($MILL.)	2002	2003	6/30/04
Cash Assets	7.3	4.7	7.5
Other	186.7	194.8	121.0
Current Assets	194.0	199.5	128.5
Accts Payable	74.4	86.0	78.7
Debt Due	89.8	85.2	4.9
Other	40.8	43.2	39.5
Current Liab.	205.0	214.4	123.1
Fx. Chg. Cov.	296%	280%	380%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.5%	6.5%	3.0%
"Cash Flow"	1.5%	1.0%	4.0%
Earnings	5.0%	2.0%	5.5%
Dividends	1.0%	1.0%	2.5%
Book Value	4.0%	3.5%	3.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	217.3	118.2	78.4	236.4	650.3
2002	278.6	101.9	78.7	182.2	641.4
2003	206.5	117.5	69.5	217.8	611.3
2004	254.5	109.7	74.0	226.8	665
2005	265	127	78.0	235	705

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.99	.17	d.22	.94	1.88
2002	1.32	d.13	d.26	.69	1.62
2003	1.01	.17	d.25	.83	1.76
2004	1.24	d.03	d.25	.84	1.80
2005	1.23	.16	d.24	.90	2.05

Calendar	QUARTERLY DIVIDENDS PAID B ▫ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.31	.31	.31	.31	1.24
2001	.31	.31	.31	.315	1.25
2002	.315	.315	.315	.315	1.26
2003	.315	.315	.315	.325	1.27
2004	.325	.325	.325		

BUSINESS: Northwest Natural Gas Co. (doing business as NW Natural) distributes natural gas at retail to 90 communities, 567,479 customers, in Oregon (96% of revs.) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.4 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline sys. to bring gas to market. Owns local underground storage. Revenue breakdown: resident'l & comm'l, 84%; ind., 10%; transport. and other, 6%. Employs 1,291. Has about 10,000 com. shrhldrs. Insiders own about 1% of com. Ch. Exec. Off.: M.S. Dodson. Inc.: OR. Addr.: 220 N.W. 2nd Ave., Portland, OR 97209. Tel.: 503-226-4211. Internet: www.nwnatural.com.

Northwest Natural had a challenging June quarter. Warmer-than-normal weather during the second quarter sent utility earnings sharply lower for the period. The tariffs for the regulated gas system include a weather normalization clause—a provision that sets rates higher or lower to make up for the change in demand due to year-to-year seasonal temperature deviations from the region's historical average. The problem is that this rate design is operative only during the year's coldest months — November through April. As a result, since the normalized tariff isn't in force during much of the June quarter, the bottom line can display wide yearly swings for this period. The difference this time around was a $0.17-a-share dip in utility operating results. The gas distributor also had to give back, in the form of a charge for the quarter, $0.02 a share of profits recorded previously on assets that regulators are now excluding from the allowed rate base. **The recent earnings setback doesn't impair the quality of this income stock.** The weather normalization provision goes into effect again in October, when the 2004-2005 home-heating season begins. Normalization insulates the utility from the adverse financial consequences of warm winters and precludes a windfall profit during periods of extreme cold. But its main purpose is to establish a more predictable revenue flow during the heating season, when the company records all of its annual earnings, and then some. And a revenue level that's on target affords management a better handle on the amount of cash flow that it can expect operations to generate. In this way, the utility's creditworthiness should improve, lowering the cost of debt a bit and making financial planning easier.

The shares are still best held for current income. NW Natural isn't a performance stock. Its support comes mainly from the dividend, which we expect will continue to grow slowly this year and next. On this prospect, the current yield is very near the gas-stock average. We look for management to submit new tariff filings from time to time to recover the cost of new capital investments and to keep the payout ratio at a comfortable level.

Gerald Holtzman *September 17, 2004*

(A) Diluted earnings per share. Excludes nonrecurring gain: '88, $0.15; '00, $0.11. Next earnings report due late October.
(B) Dividends historically paid in mid-February, mid-May, mid-August, and mid-November. In '99, extra div'd of $0.005/sh. paid Dec. 15.
▫ Div'd reinvestment plan available.
(C) Includes intangibles. At 12/31/03: $6.66/sh.
(D) In millions, adjusted for stock split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	40
Earnings Predictability	65

PINNACLE WEST NYSE-PNW

RECENT PRICE 43.23 | P/E RATIO 16.2 (Trailing: 15.7 Median: 12.0) | RELATIVE P/E RATIO 0.89 | DIV'D YLD 4.4% | VALUE LINE

TIMELINESS 4 Raised 3/28/03
SAFETY 1 Raised 5/16/03
TECHNICAL 3 Lowered 9/10/04
BETA .85 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(+5%)	6%
Low	40	(-5%)	3%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	0	0	0	0	0
Options	1	0	0	0	0	0	0	0	0
to Sell	1	0	1	0	0	0	0	0	0

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	125	123	99
to Sell	90	93	101
Hld's(000)	67420	67967	68573

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
	24.11	17.39	18.38	16.95	19.39	19.66	19.28	19.08	20.77	23.52	25.12	28.57	43.50	53.66	28.90	30.87	32.30	34.45	Revenues per sh F	37.75
	6.10	3.45	3.27	d1.39	4.70	5.25	5.09	5.16	5.90	7.12	7.34	7.73	7.99	8.72	7.01	7.33	7.65	8.50	"Cash Flow" per sh	10.05
	2.15	1.44	.81	d3.90	1.73	1.95	1.99	2.22	2.47	2.76	2.85	3.18	3.35	3.68	2.53	2.52	2.60	3.10	Earnings per sh A	3.35
	3.20	.80	--	--	--	.20	.83	.93	1.03	1.13	1.23	1.33	1.43	1.53	1.63	1.73	1.83	1.91	Div'd Decl'd per sh B▫	2.15
	3.06	3.46	2.98	2.10	2.57	2.69	2.92	3.38	2.95	3.63	3.76	4.05	7.76	12.27	9.81	7.60	5.00	6.25	Cap'l Spending per sh	7.10
	23.46	16.31	17.40	15.23	17.00	16.87	20.32	21.49	22.51	23.90	25.50	26.00	28.09	29.46	29.44	31.00	31.75	32.90	Book Value per sh C	36.50
	86.72	86.72	86.87	87.01	87.16	87.42	87.45	87.52	87.52	84.83	84.83	84.83	84.83	84.83	91.26	91.29	91.40	91.40	Common Shs Outst'g D	91.40
	10.8	8.7	16.3	--	10.8	11.5	9.6	10.8	11.8	11.8	15.2	11.9	11.3	12.0	14.4	14.0	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	12.5
	.90	.66	1.21	--	.66	.68	.63	.72	.74	.68	.79	.68	.73	.61	.79	.80			Relative P/E Ratio	.85
	13.7%	6.4%	--	--	--	.9%	4.3%	3.9%	3.5%	3.5%	2.8%	3.5%	3.8%	3.5%	4.5%	4.9%			Avg Ann'l Div'd Yield	5.1%
	1685.4	1669.8	1817.8	1935.0	2130.6	2423.4	3690.2	4551.4	2637.3	2817.9	2950	3150	Revenues ($mill) F	3450
	198.8	194.4	198.3	248.7	252.6	270.8	283.6	312.2	215.2	230.6	240	285	Net Profit ($mill)	305
	38.2%	39.7%	39.3%	37.7%	39.5%	38.3%	44.1%	40.6%	39.1%	31.4%	31.0%	31.0%	Income Tax Rate	31.0%
	4.7%	7.2%	7.4%	6.5%	7.4%	4.3%	7.6%	15.3%	20.5%	6.2%	5.0%	5.0%	AFUDC % to Net Profit	5.0%
	55.9%	53.9%	52.0%	50.5%	47.6%	50.0%	45.1%	51.7%	51.8%	50.6%	50.0%	49.0%	Long-Term Debt Ratio	46.5%
	38.3%	40.4%	43.2%	45.6%	50.2%	50.0%	54.9%	48.3%	48.2%	49.4%	50.0%	51.0%	Common Equity Ratio	53.5%
	4633.5	4660.4	4561.1	4442.9	4307.6	4411.8	4337.8	5172.4	5567.9	5727.5	5800	5910	Total Capital ($mill)	6235
	4624.1	4647.1	4655.1	4677.6	4730.6	4778.5	5133.2	5907.3	6479.4	7480.1	7620	7940	Net Plant ($mill)	8255
	6.8%	6.4%	6.2%	7.4%	7.6%	7.9%	8.1%	7.6%	5.4%	5.5%	5.5%	6.5%	Return on Total Cap'l	6.5%
	9.7%	9.0%	9.1%	11.3%	11.2%	12.3%	11.9%	12.5%	8.0%	8.1%	8.0%	9.5%	Return on Shr. Equity	9.0%
	9.8%	9.3%	9.2%	11.6%	11.2%	12.2%	11.9%	12.5%	8.0%	8.1%	8.0%	9.5%	Return on Com Equity E	9.0%
	5.7%	5.0%	4.6%	6.9%	6.4%	7.1%	6.8%	7.3%	2.9%	2.6%	2.0%	3.5%	Retained to Com Eq	3.5%
	49%	51%	54%	44%	45%	42%	43%	41%	64%	68%	70%	62%	All Div'ds to Net Prof	64%

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	20.6	12.6
3 yr.	14.2	49.3
5 yr.	35.5	65.7

CAPITAL STRUCTURE as of 6/30/04
Total Debt $3329.7 mill. Due in 5 Yrs $827.7 mill.
LT Debt $2933.7 mill. LT Interest $210.1 mill.
(LT interest earned: 2.7x)

Pension Assets-12/03 $887.3 mill. Oblig. $1.31 bill.

Pfd Stock None

Common Stock 91,318,091 shs. as of 8/4/04
MARKET CAP: $3.9 billion (Mid Cap)

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	+3.8	-.2	+5.1
Avg. Indust. Use (MWH)	733	660	695
Avg. Indust. Revs. per KWH (¢)	5.49	5.57	5.62
Capacity at Peak (Mw)	5725	6490	5802
Peak Load, Summer (Mw)	5687	5803	6332
Annual Load Factor (%)	53.2	52.6	50.9
% Change Customers (yr-end)	+4.1	+3.1	+3.3
Fixed Charge Cov. (%)	375	274	250

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	7.5%	10.5%	Nil
"Cash Flow"	10.5%	2.5%	4.5%
Earnings	--	1.5%	2.5%
Dividends	--	7.5%	4.5%
Book Value	6.0%	4.5%	3.5%

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	938.8	1294	1574	744.6	4551.4
2002	501.5	618.4	873.0	644.4	2637.3
2003	552.7	683.3	847.7	734.2	2817.9
2004	574.4	722.7	886.8	766.1	2950
2005	630	770	930	820	3150

EARNINGS PER SHARE A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.70	.79	1.77	.42	3.68
2002	.63	.89	1.19	d.18	2.53
2003	.22	.60	1.20	.50	2.52
2004	.33	.78	1.15	.34	2.60
2005	.40	.80	1.40	.50	3.10

QUARTERLY DIVIDENDS PAID B▫

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.35	.35	.35	.375	1.43
2001	.375	.375	.375	.40	1.53
2002	.40	.40	.40	.425	1.63
2003	.425	.425	.425	.45	1.73
2004	.45	.45	.45	.475	

BUSINESS: Pinnacle West Capital Corporation (parent of Arizona Public Service) supplies electricity to approx. 1,780,000 people in 11 of 15 Arizona counties. Electric revenue sources: residential, 50%; commercial, industrial, and other, 50%. Power costs: 36% of electric revenues; labor costs: 13% of total revenues. The mining industry is the largest industrial customer. Energy sources: coal, 20%; nuclear, 15%; gas & other, 11%; purch. power, 54%. Has 7,200 employees; 35,623 stockholders. Reported '03 depreciation rate: 3.4%. Est'd plant age: 7 years. Chairman & CEO: William J. Post. Pres.: Jack E. Davis. Inc.: Arizona. Address: 400 E. Van Buren St., Suite 700, P.O. Box 52132, Phoenix, AZ 85072-2132. Tel.: 602-379-2500. Internet: www.pinnaclewest.com.

Pinnacle West has an agreement with outside parties covering its electric rate filing. The settlement calls for an increase of $75.5 million, down from the requested $175 million. Furthermore, it lowers the allowed return on equity from the present 11.25% to 10.25% and provides for a capital structure of 55% long-term debt and 45% common equity for ratemaking purposes. (The company had sought a 50/50 split.) On the plus side, the parties recommend that PNW's APS regulated utility be allowed to acquire unregulated Pinnacle West Energy's (PWE) five plants and place them in the rate base at a value of $700 million. In exchange, APS will forego any present or future claims of stranded costs related to PWE assets. The Arizona regulators are expected to act on the settlement by yearend.

The noncore subsidiaries are average performers. SunCor, a real estate developer and landowner in Arizona, contributed $55 million to corporate net in 2003, but may earn somewhat less this year. It plans sales of up to $100 million by the end of 2005 and will transfer the proceeds to its parent rather than reinvesting in housing development. El Dorado, PNW's investment arm, which earned $7 million last year, may only break even in 2004. It has an agreement to sell its stake in a company specializing in nuclear fuel technology for $16 million, for a profit of $6 million, and will then limit investments to fields related to economic development.

Earnings may be a tad higher this year. PNW will benefit from lower regulatory asset amortization and customer growth. Other pluses include the absence of 2003's Cholla 3 coal-fired plant's forced outage and the expiration last June 30th of five years of rate reductions. But these gains will be largely offset by increased costs related to placing new plants in service. On balance, we estimate earnings of $2.60 a share in 2004. The pending rate order suggests substantial improvement next year. For now, the stock is untimely.

Dividends are growing at a healthy rate. A low payout ratio and our projection of steady earnings gains to 2007-2009 point to above-average dividend hikes over the same period. Utility investors might consider these high-quality shares.

Arthur H. Medalie *November 12, 2004*

Company's Financial Strength	A
Stock's Price Stability	80
Price Growth Persistence	70
Earnings Predictability	65

To subscribe call 1-800-833-0046.

(A) Diluted egs. Excl. nonrecur.: '88, ($2.10); '91, ($4.68); '93, 22¢; '94, 31¢; '95, net 6¢; '99, ($1.20); '02, (77¢); excl. discont.: '89, ($7.80); '90, 31¢; '91, $1.76; '92, 7¢; '99, ($1.97); '00, 22¢. Next egs. rpt. due late Jan. B) Div'ds historically paid in early Mar., early June, early Sept., and early Dec. ▫ Reinvest. plan avail. (C) Incl. def. chgs. In '03: $3.02/sh. (D) In mill. (E) Rate base: Fair value. Rate all'd on com. eq. in '96: 11.25%; earn. on avg. com. eq. in '03: 8.4%. Regul. Clim.: Avg. (F) Excl. sales tax begin. '94.

PNM RESOURCES NYSE-PNM

RECENT PRICE 24.02 | P/E RATIO 17.3 (Trailing: 17.6 Median: 10.9) | RELATIVE P/E RATIO 0.95 | DIV'D YLD 2.7% | VALUE LINE

TIMELINESS 3 Raised 11/5/04
SAFETY 2 Raised 8/16/02
TECHNICAL 2 Raised 10/22/04
BETA .85 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	25	(+5%)	4%
Low	20	(-15%)	-1%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	0	0	0	0	0
Options	5	0	3	3	0	1	0	0	2
to Sell	4	0	3	3	0	1	0	0	1

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	69	83	74
to Sell	57	52	66
Hld's(000)	49740	52732	53012

High: 9.3 9.1 12.2 13.7 15.8 16.5 14.3 18.9 25.2 20.5 19.6 24.2 18.7
Low: 6.5 7.3 8.1 11.5 10.5 11.6 9.9 9.8 15.3 11.5 12.6 18.7

LEGENDS
2.16 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 6/04
Options: No
Shaded area indicates recession

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	27.2	12.6
3 yr.	-17.5	49.3
5 yr.	19.0	66.7

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
13.44	14.61	13.65	13.68	13.60	13.95	14.44	12.90	14.10	18.12	17.43	18.96	27.46	40.09	19.92	24.11	26.30	27.50	Revenues per sh	30.80
2.77	2.43	1.64	1.76	2.10	2.34	2.55	2.38	2.61	2.58	3.04	2.82	3.16	4.31	2.83	3.05	3.40	3.55	"Cash Flow" per sh	3.95
1.31	1.15	.21	.21	.50	.61	1.11	.91	1.15	1.25	1.50	1.29	1.55	2.61	1.07	1.15	1.40	1.45	Earnings per sh A	1.55
1.25	.25	--	--	--	--	--	--	.24	.42	.51	.53	.53	.53	.57	.61	.63	.66	Div'd Decl'd per sh B n	.74
1.38	1.18	1.30	1.28	1.52	1.61	1.90	1.70	1.42	2.05	2.06	1.56	2.50	4.51	4.09	2.78	2.30	2.00	Cap'l Spending per sh	2.00
12.02	12.01	11.57	11.79	10.00	8.86	10.08	11.22	12.04	12.84	13.75	14.74	15.76	17.25	16.60	17.84	18.60	19.35	Book Value per sh C	21.60
62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	61.05	58.68	58.68	58.68	60.39	60.50	60.50	Common Shs Outst'g D	61.00
7.9	7.8	34.7	29.1	16.5	9.5	7.5	10.6	11.0	10.0	9.8	9.5	8.5	7.3	15.1	14.7	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	15.0
.66	.59	2.58	1.86	1.00	.56	.49	.71	.69	.58	.51	.54	.55	.37	.82	.84			Relative P/E Ratio	1.00
12.0%	2.8%	--	--	--	--	--	--	1.9%	3.3%	3.5%	4.4%	4.1%	2.8%	3.5%	3.6%			Avg Ann'l Div'd Yield	3.2%
904.7	808.5	883.4	1135.3	1092.4	1157.5	1611.3	2352.1	1169.0	1455.7	1590	1665	Revenues ($mill)	1880
75.7	60.9	72.6	79.3	105.2	79.9	92.7	156.3	64.3	68.9	85.0	88.0	Net Profit ($mill)	95.0
36.9%	45.5%	35.2%	37.1%	34.9%	34.6%	44.5%	34.2%	24.5%	29.0%	29.0%	29.0%	Income Tax Rate	29.0%
.4%	--	--	--	--	--	--	--	--	1.7%	2.0%	2.0%	AFUDC % to Net Profit	2.0%
51.5%	50.5%	48.2%	46.6%	53.2%	52.0%	50.4%	48.2%	49.8%	47.5%	46.5%	45.5%	Long-Term Debt Ratio	42.5%
43.2%	48.7%	50.9%	52.5%	45.4%	47.3%	48.9%	51.1%	49.5%	51.9%	53.0%	54.0%	Common Equity Ratio	57.0%
1460.5	1444.5	1481.0	1531.2	1896.4	1901.2	1891.3	1978.7	1966.9	2077.3	2125	2170	Total Capital ($mill)	2320
1696.7	1574.4	1552.7	1573.2	1593.8	1582.4	1617.3	1781.0	1867.3	2194.4	2210	2205	Net Plant ($mill)	2145
7.4%	6.2%	6.6%	6.7%	6.9%	5.9%	6.6%	9.5%	4.7%	4.7%	5.5%	5.5%	Return on Total Cap'l	5.5%
10.7%	8.5%	9.5%	9.7%	11.8%	8.8%	9.9%	15.3%	6.5%	6.3%	7.5%	7.5%	Return on Shr. Equity	7.0%
11.0%	7.9%	9.5%	9.8%	12.1%	8.8%	10.0%	15.4%	6.5%	6.3%	7.5%	7.5%	Return on Com Equity E	7.0%
11.0%	7.9%	7.6%	6.5%	8.4%	5.2%	6.5%	12.3%	3.1%	3.0%	4.0%	4.0%	Retained to Com Eq	4.0%
8%	8%	21%	34%	31%	42%	35%	20%	53%	53%	45%	45%	All Div'ds to Net Prof	48%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $1047.8 mill. Due in 5 Yrs $362.5 mill.
LT Debt $985.3 mill. LT Interest $59.4 mill.
(LT interest earned: 3.3x)
Pension Assets-12/03 $425.7 mill. Oblig. $463.8 mill.
Pfd Stock $12.8 mill. Pfd Div'd $.6 mill.
128,000 shs. 4.58%, $100 par w/o mandatory redemption.
Sinking fund began 2/1/84.

Common Stock 60,421,857 shs. as of 7/30/04

MARKET CAP: $1.5 billion (Mid Cap)

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	+2.3	+2.1	+2.1
Avg. Indust. Use (MWH)	4252	5186	4566
Avg. Indust. Revs. per KWH (¢)	5.16	5.16	5.00
Capacity at Peak (Mw)	1521	1742	1742
Peak Load, Summer (Mw)	1397	1456	1661
Annual Load Factor (%)	69.9	67.5	64.5
% Change Customers (yr-end)	+2.4	+1.5	+3.6
Fixed Charge Cov. (%)	481	177	231

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	7.5%	11.0%	1.5%
"Cash Flow"	5.0%	4.5%	2.5%
Earnings	12.5%	4.5%	-.5%
Dividends	--	8.0%	4.5%
Book Value	5.5%	6.0%	4.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	736.5	666.1	621.9	327.6	2352.1
2002	314.0	264.6	289.4	301.0	1169.0
2003	387.7	340.2	385.2	342.6	1455.7
2004	443.7	365.6	410	370.7	1590
2005	460	385	430	390	1665

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	1.07	.83	.59	.12	2.61
2002	.42	.19	.30	.16	1.07
2003	.35	.29	.27	.24	1.15
2004	.41	.28	.45	.26	1.40
2005	.40	.30	.47	.28	1.45

Calendar	QUARTERLY DIVIDENDS PAID B n Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.133	.133	.133	.133	.53
2001	.133	.133	.133	.133	.53
2002	.133	.147	.147	.147	.57
2003	.147	.153	.153	.153	.61
2004	.153	.16	.16	.16	

BUSINESS: PNM Resources, parent of Public Service Company of New Mexico, sells electricity (75% of revenues), gas (25%), other less than (1%) in north-central New Mexico (population: 1,300,000). Largest customer: City of Albuquerque. Electric revenue breakdown: residential, 36%; commercial, 45%; industrial, 12%; other, 7%. Area's military establishments are major customers. Fuels: coal, 68%; nuclear, 30%; gas/oil, 2%. Fuel costs: 55% of revs.; labor costs: 16%. '03 depreciation rate: 3.3%. Est'd plant age: 9 years. Has 2,637 employees, 14,762 stockholders. Chairman, Chief Executive Officer & President: Jeffry E. Sterba. Incorp.: New Mexico. Address: 414 Silver Avenue, South West, Albuquerque, New Mexico 87103. Telephone: 505-241-2477. Internet: www.pnm.com.

PNM Resources has an agreement to buy privately held TNP Enterprises. It would purchase all of TNP's outstanding common shares for $189 million, with equal amounts of cash and PNM common stock. It would also assume $835 million of TNP's net debt and senior redeemable cumulative preferred stock. TNP provides transmission and distribution electric services in Texas and in southern New Mexico. It owns no generating assets. In the first full year after closing, PNM expects overhead cost reductions will lift earnings by 10% and free cash flow by 20%. The transaction is subject to various federal and state commission approvals. Closing is targeted for the summer of 2005. We won't include the acquisition in our estimates until it is consummated.

The company has issued requests for power. It seeks up to 296 megawatts (mw) of peaking and intermediate load capacity starting in 2006. Some 165 mw of summer capacity will be needed in the northern part of New Mexico and 131 mw in the south. The request results not only from customer growth but from a 15% reserve margin required by the state commission. (The current margin is only 5%.) The company expects to notify successful bidders by November 10th. A portion of the additional power will be available for expansion of PNM's thriving wholesale marketing operations.

Earnings are on an upward path. New long-term power contracts and higher prices are boosting wholesale operations. Too, retail energy sales continue to rise. PNM will also benefit from the absence of last year's one-time charge of $0.24 a share for the call premium paid on retired debt and from 2004's bond refinancings at lower rates. A full year of the $22 million gas rate increase in June, 2003 is another plus. All told, we estimate a 22% rise in 2004 earnings, to $1.40 a share, and a modest gain next year.

Income-oriented investors will likely fare better elsewhere. Though a low payout ratio and our projection of modest earnings gains from the current level to 2007-2009 point to above-average dividend growth over that timeframe, this stock's yield will probably remain below the group average 3 to 5 years out.

Arthur H. Medalie *November 12, 2004*

(A) EPS diluted. Next egs rep'l due late Jan. Excl. nonrecur. gains (losses): '88, ($3.21); '90, (37¢); '92, ($2.28); '93, ($1.90); '94, 7¢; '95, net: 23¢; '97, 3¢; '98, net (16¢); '99, 5¢; '00, 14¢; '01, (10¢); '03, 45¢. (B) Div'ds historically paid in mid-Feb., mid-May, mid-Aug., and mid-Nov. n Div'd reinvest. plan avail. (C) Incl. intang. in '03: $7.15/sh. (D) In mill. (E) Rate base: net orig. cost. Elect. ROE allow. in '90: 12.52%; earned on avg. com. eq. '03: 6.7%. Regul. Clim.: Avg.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	60
Earnings Predictability	50

SOUTHERN CO. NYSE-SO

RECENT PRICE 33.25 | P/E RATIO 16.2 (Trailing: 16.5 Median: 14.0) | RELATIVE P/E RATIO 0.86 | DIV'D YLD 4.4% | VALUE LINE

TIMELINESS 3 Raised 9/17/04
SAFETY 2 Lowered 12/8/00
TECHNICAL 3 Lowered 3/12/04
BETA .55 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+5%)	6%
Low	25	(-25%)	-1%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	4	1	0	1	0	0	3	1
to Sell	0	4	1	0	1	0	0	3	1

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	265	264	205
to Sell	195	211	231
Hld's(000)	263149	269909	280819

Percent shares traded: 8, 4, 2

LEGENDS
— 1.04 x Dividends p sh divided by Interest Rate
---- Relative Price Strength
2-for-1 split 3/94
Options: Yes
Shaded area indicates recession

High:	23.6	22.1	25.0	25.9	26.3	31.6	29.6	35.0	35.7	31.1	32.0	33.4		
Low:	18.5	17.3	19.4	21.1	19.9	23.9	22.1	20.4	20.9	23.2	27.0	27.4		

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	11.1	12.6
3 yr.	54.8	49.3
5 yr.	49.4	66.7

In September 2000, Southern conducted an initial public offering in its global independent power marketing and trading subsidiary, called Mirant. Issuing 66.7 million shares, the company and Mirant shared $1.8 billion in gross proceeds. In April 2001, management spun off the remaining 80.3% stake in Mirant to Southern investors; 0.4 of a common share in the subsidiary was distributed for each common share in the parent held. Mirant Corp. filed for Chapter 11 bankruptcy protection in July 2003.

CAPITAL STRUCTURE as of 9/30/04
Total Debt $13,520 mill. Due in 5 Yrs $6,655 mill.
LT Debt $12,707 mill. LT Interest $570 mill.
(LT interest earned: 4.6x)

Pension Assets-12/03 $5.2 bill. Oblig. $4.6 bill.
Pfd Stock $569.7 mill. Pfd Div'd $29.6 mill.
Incl. 4.20%-7.00%, cum. sub. pfd. ($100 par); 5.20%- 5.83%, cum. sub. pfd ($25 par); 4.95% cum. sub. pfd. ($100,000 liq. val.).

Common Stock 739,686,919 shs.
MARKET CAP: $24.6 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	-3.2	+4.5	Nil
Avg. Indust. Use (MWH)	3778	3847	3887
Avg. Indust. Revs. per KWH (¢)	4.05	3.86	3.94
Capacity at Peak (Mw)	34579	36353	38679
Peak Load, Summer (Mw)	29700	32355	32949
Annual Load Factor (%)	62.0	51.1	62.0
% Change Customers (yr-end)	+1.4	+1.8	+1.7
Fixed Charge Cov. (%)	257	295	332

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	1.5%	-2.5%	3.0%
"Cash Flow"	1.5%	-2.5%	2.5%
Earnings	2.0%	1.5%	5.0%
Dividends	2.0%	1.0%	4.0%
Book Value	.5%	-2.5%	6.0%

QUARTERLY REVENUES (mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	2270	2561	3165	2159	10155
2002	2214	2630	3248	2457	10549
2003	2548	2845	3318	2540	11251
2004	2732	3009	3441	2668	*11850*
2005	*2825*	*3100*	*3575*	*2750*	*12250*

EARNINGS PER SHARE B

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.26	.40	.79	.16	1.61
2002	.32	.47	.82	.24	1.85
2003	.41	.49	.85	.22	1.97
2004	.45	.47	.87	*.21*	*2.00*
2005	*.47*	*.50*	*.90*	*.23*	*2.10*

QUARTERLY DIVIDENDS PAID = C

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.335	.335	.335	.335	1.34
2001	.335	.335	.335	.335	1.34
2002	.335	.335	.343	.343	1.36
2003	.343	.343	.35	.35	1.39
2004	.35	.35	.358	.358	

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
	12.63	13.70	15.30	18.41	16.32	17.39	14.76	14.53	14.71	15.31	*16.00*	*16.35*	Revenues per sh A	*17.65*
	3.22	3.52	3.64	3.90	4.25	4.17	3.89	3.54	3.45	3.54	*3.50*	*3.65*	"Cash Flow" per sh	*4.10*
	1.52	1.66	1.68	1.58	1.73	1.83	2.01	1.61	1.85	1.97	*2.00*	*2.10*	Earnings per sh B	*2.45*
	1.18	1.22	1.26	1.30	1.34	1.34	1.34	1.34	1.36	1.39	*1.42*	*1.46*	Div'd Decl'd per sh C=	*1.70*
	2.34	2.09	1.82	2.71	2.87	3.84	3.26	3.74	3.79	2.72	*2.95*	*3.20*	Cap'l Spending per sh	*3.00*
	12.46	13.09	13.61	14.08	14.02	13.82	15.67	11.42	12.15	13.13	*13.75*	*14.65*	Book Value per sh D	*17.40*
	657.00	670.00	677.00	685.00	698.63	666.00	682.00	699.00	716.90	734.80	*740.00*	*750.00*	Common Shs Outst'g E	*780.00*
	12.9	13.2	13.8	14.0	15.7	14.3	13.2	14.6	14.6	14.8	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*13.0*
	.85	.88	.86	.81	.82	.82	.86	.75	.80	.86			Relative P/E Ratio	*.85*
	6.0%	5.6%	5.5%	5.9%	4.9%	5.1%	5.0%	5.7%	5.0%	4.7%			Avg Ann'l Div'd Yield	*5.3%*
	8297.0	9180.0	10358	12611	11403	11585	10066	10155	10549	11251	*11850*	*12250*	Revenues ($mill) A	*13750*
	1076.0	1191.0	1234.0	1245.0	1372.0	1457.0	1501.0	1306.0	1510.0	1611.0	*1535*	*1595*	Net Profit ($mill)	*1930*
	38.9%	39.2%	37.8%	36.9%	24.1%	25.6%	31.0%	29.9%	25.9%	29.3%	*30.0%*	*30.0%*	Income Tax Rate	*32.0%*
	2.7%	2.1%	1.9%	1.6%	1.8%	1.9%	--	--	1.5%	1.6%	*3.5%*	*2.0%*	AFUDC % to Net Profit	*1.5%*
	44.1%	44.9%	42.8%	46.4%	45.9%	48.2%	37.1%	43.8%	43.1%	45.9%	*53.5%*	*52.5%*	Long-Term Debt Ratio	*49.0%*
	47.6%	47.4%	49.7%	43.5%	42.9%	37.8%	50.6%	42.2%	43.4%	43.6%	*44.0%*	*45.0%*	Common Equity Ratio	*49.0%*
	17211	18510	18553	22158	22817	24372	21147	18925	20086	22135	*23250*	*24300*	Total Capital ($mill)	*27650*
	21117	23026	23269	23652	24124	24544	21622	23084	24642	27534	*28975*	*30545*	Net Plant ($mill)	*35215*
	7.9%	7.9%	8.1%	7.1%	7.6%	7.8%	8.4%	8.1%	8.5%	8.5%	*8.0%*	*8.0%*	Return on Total Cap'l	*8.0%*
	11.2%	11.7%	11.6%	10.5%	11.1%	11.5%	11.3%	12.3%	13.2%	13.5%	*14.0%*	*14.0%*	Return on Shr. Equity	*13.5%*
	12.1%	12.6%	12.2%	11.2%	12.2%	13.6%	12.3%	14.0%	15.1%	14.9%	*14.5%*	*14.5%*	Return on Com Equity F	*14.0%*
	2.7%	3.3%	3.0%	2.0%	2.7%	3.5%	4.1%	2.5%	4.1%	4.5%	*4.0%*	*4.5%*	Retained to Com Eq	*4.0%*
	79%	75%	77%	84%	81%	77%	71%	85%	76%	73%	*73%*	*70%*	All Div'ds to Net Prof	*70%*

BUSINESS: The Southern Company's five operating subsidiaries supply electricity to about 122,000 square miles of Georgia (48% of 2003 revenues); Alabama (36%); Florida (8%); and Mississippi (8%). Revenue distrib. ('03): residential, 40%; industrial, 24%; commercial, 35%; other, 1%. Textile, chemical, and paper companies are largest customer groups, accounting for the bulk of industrial revenues. Fuel sources ('03): coal, 66%; nuclear, 15%; hydro, 4%; gas, 9%; purch. pwr, 6%. Fuel & Purchased Power costs: 33% of '03 electricity revs. Has 25,760 employees, 134,070 shareholders of record. '03 deprec. rate: 2.8%. Chrmn, Pres., and CEO: David M. Ratcliffe. Inc.: Del. Addr.: 270 Peachtree St. N.W., Atlanta, GA 30303. Tel.: 404-506-5000. Internet: www.southernco.com.

Southern Co.'s 2005 earnings prospects appear bright . . . We expect the company to achieve its annual share-net growth goal of 5%. Retail utility operations are benefiting from a recovery in the Southeast. Most notably, strength in Alabama's auto, steel, and chemical sectors is driving power sales higher. A healthy industrial base is helping to enlarge the number of residential and commercial ratepayers across Southern's service territory. Efficient management of low-cost power plants and effective expense controls are producing dependable earnings streams. Assuming that temperatures stay close to the historical norm and that the hurricane season is easier, year-over-year earnings comparisons should be positive, especially in the September period. The wholesale business should also do well next year. Southern has been busy lining up long-term supply pacts with cooperatives, municipalities, and power distribution companies. This business likely will account for two percentage points of the total yearly earnings advance.

. . . as long as the company continues to receive favorable rate treatment. Up to now, Southern has secured very reasonable rate orders in most of its state jurisdictions. Currently, Georgia Power has a case on file for about a $280 million annual revenue hike, based on a 12.5% return on equity. The utility needs to recoup higher purchase power, operating and maintenance, system expansion, and depreciation costs. The state public service commission staff has recommended a $57 million rate cut and only a 9.25% rate of return. A final ruling is due later this month. Our estimates reflect a fair decision (and the inclusion of the McIntosh plant in the rate base). Separately, Southern is still waiting for the Federal Energy Regulatory Commission to rule on whether or not it has an unfair advantage in the wholesale arena. Given its extensive transmission network, the company has a tough case to prove, and faces more modest returns on investment. All in all,

The stock is a worthwhile current income holding, but the high share price limits potential total returns to 2007-2009. That's despite our expectation of positive rate treatment.

David M. Reimer *December 3, 2004*

(A) 2000 data restated to reflect Mirant spinoff. (B) Includes Mirant earnings of 49¢ in '00. Excludes nonrecurring gain (loss): 2Q, '03, 11¢; 4Q, '03, (5¢). Next earnings report due late Jan. (C) Dividends historically paid in early Mar., June, Sep., and Dec. = Div'd reinvest. plan available. (D) Incl. deferred chgs. In '03, $1.19/sh. (E) In mill., adj'd for split. (F) Rate base: AL, MS, fair value; FL, GA, original cost. Allowed return on common eq.: 10.0%-14.5%. Earned on avg. com. eq., '03: 16.05%. Regulatory Clim.: AL, MS-Avg; GA, FL-Above Avg.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	NMF
Earnings Predictability	90

SOUTHWEST WATER NDQ–SWWC

RECENT PRICE 12.43 | TRAILING P/E RATIO 24.4 | RELATIVE P/E RATIO 1.27 | DIV'D YLD 1.6% | VALUE LINE 4708

RANKS

PERFORMANCE 3 Average
Technical 3 Average
SAFETY 3 Average
BETA .65 (1.00 = Market)

Financial Strength 8+
Price Stability 75
Price Growth Persistence 95
Earnings Predictability 85

LEGENDS
— 12 Mos Mov Avg
···· Rel Price Strength
3-for-2 split 10/99
5-for-4 split 1/01
5% Div 9/01
6% Div 12/02
4-for-3 split 1/04
Shaded area indicates recession

© VALUE LINE PUBLISHING, INC.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
SALES PER SH	6.86	6.19	6.20	6.79	8.25	8.99	10.05	11.79	—	
"CASH FLOW" PER SH	.51	.59	.65	.72	.84	.95	.95	1.00	—	
EARNINGS PER SH	.17	.23	.28	.34	.42	.46	.44	.49	.50[A,D]	.55[C]/NA
DIV'DS DECL'D PER SH	.09	.10	.11	.12	.14	.15	.16	.18	—	
CAP'L SPENDING PER SH	1.04	.82	.67	.58	.61	1.17	1.97	1.25	—	
BOOK VALUE PER SH	2.65	2.78	2.88	3.35	3.79	4.23	4.71	5.40	—	
COMMON SHS OUTST'G (MILL.)	11.29	11.47	11.63	11.90	12.69	12.86	13.01	14.67	—	
AVG ANN'L P/E RATIO	16.6	16.9	17.2	19.6	17.0	19.8	24.8	21.2	24.9	22.6/NA
RELATIVE P/E RATIO	1.04	.97	.89	1.12	1.11	1.01	1.35	1.21	—	
AVG ANN'L DIV'D YIELD	3.4%	2.7%	2.3%	1.8%	2.0%	1.7%	1.5%	1.7%	—	
SALES ($MILL.)	66.2	71.0	72.2	80.9	104.7	115.5	130.8	173.0	—	
OPERATING MARGIN	14.8%	16.0%	17.1%	17.0%	16.1%	90.8%	90.8%	12.9%	—	
DEPRECIATION ($MILL.)	3.9	4.2	4.3	4.5	5.3	6.1	6.4	7.5	—	
NET PROFIT ($MILL.)	1.9	2.6	3.4	4.2	5.4	6.2	6.0	7.2	—	
INCOME TAX RATE	41.8%	41.6%	39.5%	39.0%	37.0%	38.0%	34.9%	35.9%	—	
NET PROFIT MARGIN	2.9%	3.7%	4.6%	5.2%	5.1%	5.4%	4.6%	4.2%	—	
WORKING CAP'L ($MILL.)	d4.1	d8.7	d2.7	1.7	1.2	4.8	d1.8	4.0	—	
LONG-TERM DEBT ($MILL.)	30.7	29.8	33.4	33.5	46.4	58.1	81.0	73.1	—	
SHR. EQUITY ($MILL.)	30.4	32.4	35.1	40.5	48.8	55.0	61.8	79.7	—	
RETURN ON TOTAL CAP'L	5.5%	6.8%	7.1%	7.6%	7.6%	7.6%	5.8%	6.2%	—	
RETURN ON SHR. EQUITY	6.3%	8.0%	9.5%	10.3%	11.1%	11.4%	9.7%	9.0%	—	
RETAINED TO COM EQ	2.9%	4.5%	6.0%	7.0%	7.8%	7.8%	6.3%	6.8%	—	
ALL DIV'DS TO NET PROF	55%	45%	38%	33%	31%	32%	36%	36%	—	

Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.

[A] No. of analysts changing earn. est. in last 16 days: 0 up, 0 down, consensus 5-year earnings growth 8.3% per year. [B] Based upon 4 analysts' estimates. [C] Based upon 4 analysts' estimates.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Sales	11.0%	17.5%
"Cash Flow"	10.5%	5.5%
Earnings	15.5%	12.5%
Dividends	10.5%	10.5%
Book Value	11.5%	14.5%

Fiscal Year	QUARTERLY SALES ($mill.) 1Q	2Q	3Q	4Q	Full Year
12/31/02	28.2	32.7	34.6	35.3	130.8
12/31/03	36.1	41.5	51.4	44.0	173.0
12/31/04	38.7	45.7			
12/31/05					

Fiscal Year	EARNINGS PER SHARE 1Q	2Q	3Q	4Q	Full Year
12/31/01	.04	.13	.17	.12	.46
12/31/02	.04	.12	.14	.14	.44
12/31/03	d.01	.14	.23	.13	.49
12/31/04	—	.15	.23	.13	
12/31/05	.02				

Cal-endar	QUARTERLY DIVIDENDS PAID 1Q	2Q	3Q	4Q	Full Year
2001	.036	.036	.036	.036	.15
2002	.04	.04	.04	.04	.16
2003	.044	.044	.044	.048	.18
2004	.048	.048	.048	.053	.20

INSTITUTIONAL DECISIONS

	4Q'03	1Q'04	2Q'04
to Buy	32	33	26
to Sell	14	22	27
Hld's(000)	3590	3915	3985

ASSETS ($mill.)	2002	2003	6/30/04
Cash Assets	1.6	5.4	1.9
Receivables	18.7	19.8	25.5
Inventory	0	0	0
Other	11.5	10.2	11.9
Current Assets	29.8	35.4	39.3
Property, Plant & Equip. at cost	255.9	287.4	--
Accum Depreciation	62.0	67.9	--
Net Property	203.9	219.5	227.7
Other	35.0	41.3	44.8
Total Assets	268.7	296.2	311.8
LIABILITIES ($mill.)			
Accts Payable	11.4	11.4	8.2
Debt Due	2.0	2.7	4.1
Other	18.2	17.3	17.1
Current Liab	31.6	31.4	29.4

LONG-TERM DEBT AND EQUITY as of 6/30/04

Total Debt $64.9 mill. Due in 5 Yrs. NA
LT Debt $60.8 mill.
Including Cap. Leases NA (37% of Cap'l)

Leases, Uncapitalized Annual rentals NA

Pension Liability None in '03 vs. None in '02

Pfd Stock None Pfd Div'd Paid None

Common Stock 16,568,295 shares (63% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: Southwest Water Co. operates as a regulated public water utility company in the United States. It has two segments, Services and Utility. The Services segment provides water and wastewater facility maintenance services, equipment maintenance and repair, sewer pipeline cleaning, billing and collection services, and state-certified water and wastewater laboratory analysis on a contract basis. It primarily operates in Texas, New Mexico, California, Colorado, Alabama, Mississippi, and Georgia. This segment also provides utility billing services for multiple family housing units. The Utility segment owns and operates rate-regulated public water utilities in California, New Mexico, and Texas, as well as owns and manages wastewater facilities in New Mexico and Texas. In July, the company acquired a Texas utility consisting of 86 water systems and 11 wastewater systems from Tecon Water Holdings, L.P. for approximately $63 million. Has about 1400 employees. Chairman, C.E.O. & President: Anton C. Garnier. Inc.: DE. Address: One Wilshire Building, 624 S Grand Avenue, Ste. 2900, Los Angeles, CA 90017. Tel.: (213) 929-1800. Internet: http://www.swwc.com. A.Z.

October 29, 2004

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 9/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-1.76%	-9.65%	17.61%	26.90%	74.08%

YORK WATER CO NDQ–YORW

RECENT PRICE 17.10 | TRAILING P/E RATIO 20.6 | RELATIVE P/E RATIO 1.07 | DIV'D YLD 3.3% | VALUE LINE 47.09

RANKS

PERFORMANCE 2 (Above Average)
Technical 3 (Average)
SAFETY 3 (Average)
BETA .55 (1.00 = Market)

Financial Strength B+
Price Stability 70
Price Growth Persistence NMF
Earnings Predictability NMF

LEGENDS
— 12 Mos Mov Avg
. . . Rel Price Strength
2-for-1 split 5/02
Shaded area indicates recession

15.33 8.50 | 20.17 12.30 | 20.23 14.00 | 21.04 16.50 | High / Low

© VALUE LINE PUBLISHING, INC.	1998	1997	1998	1999	2000	2001	2002	2003	2004	2005/2008
REVENUES PER SH	—	—	—	—	6.07	3.08	3.07	3.25	—	
"CASH FLOW" PER SH	—	—	—	—	1.79	.88	.86	.97	—	
EARNINGS PER SH	—	—	—	—	1.24	.65	.60	.70	.75[A,B]	.77[C]/NA
DIV'D DECL'D PER SH	—	—	—	—	.98	.51	.53	.55	—	
CAP'L SPENDING PER SH	—	—	—	—	2.11	1.12	.99	1.51	—	
BOOK VALUE PER SH	—	—	—	—	10.66	5.69	5.85	6.08	—	
COMMON SHS OUTST'G (MILL)	—	—	—	—	3.04	6.31	6.36	6.42	—	
AVG ANN'L P/E RATIO	—	—	—	—	—	17.9	26.9	24.5	22.8	22.2/NA
RELATIVE P/E RATIO	—	—	—	—	—	.92	1.47	1.40	—	
AVG ANN'L DIV'D YIELD	—	—	—	—	—	4.3%	3.3%	3.2%	—	
REVENUES ($MILL)	—	—	—	—	18.5	19.4	19.5	20.9	—	
NET PROFIT ($MILL)	—	—	—	—	3.8	4.0	3.8	4.4	—	
INCOME TAX RATE	—	—	—	—	35.7%	35.8%	34.9%	34.8%	—	
AFUDC % TO NET PROFIT	—	—	—	—	1.5%	2.2%	3.7%	—	—	
LONG-TERM DEBT RATIO	—	—	—	—	50.2%	47.7%	46.7%	43.4%	—	
COMMON EQUITY RATIO	—	—	—	—	49.8%	52.3%	53.3%	56.6%	—	
TOTAL CAPITAL ($MILL)	—	—	—	—	65.2	68.6	69.8	69.0	—	
NET PLANT ($MILL)	—	—	—	—	97.0	102.3	106.7	116.5	—	
RETURN ON TOTAL CAP'L	—	—	—	—	7.8%	7.8%	7.4%	8.5%	—	
RETURN ON SHR EQUITY	—	—	—	—	11.6%	11.2%	10.2%	11.4%	—	
RETURN ON COM EQUITY	—	—	—	—	11.6%	11.2%	10.2%	11.4%	—	
RETAINED TO COM EQ	—	—	—	—	2.5%	2.5%	1.3%	2.6%	—	
ALL DIV'DS TO NET PROF	—	—	—	—	78%	78%	88%	77%	—	

Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.

[A] No. of analysts changing earn. est. in last 16 days: 0 up, 0 down; consensus 5-year earnings growth 7.0% per year. [B] Based upon one analyst's estimate. [C] Based upon one analyst's estimate.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Revenues	—	6.0%
"Cash Flow"	—	13.0%
Earnings	—	16.5%
Dividends	—	5.0%
Book Value	—	4.0%

Fiscal Year	QUARTERLY SALES ($mill.) 1Q	2Q	3Q	4Q	Full Year
12/31/02	4.7	4.9	5.3	4.7	19.5
12/31/03	4.8	5.0	5.6	5.3	20.9
12/31/04	5.4	5.5			
12/31/05					

Fiscal Year	EARNINGS PER SHARE 1Q	2Q	3Q	4Q	Full Year
12/31/01	.13	.14	.23	.15	.65
12/31/02	.14	.15	.18	.13	.60
12/31/03	.12	.16	.24	.18	.70
12/31/04	.25	.16			
12/31/05					

Calendar	QUARTERLY DIVIDENDS PAID 1Q	2Q	3Q	4Q	Full Year
2001	.125	.125	.125	.125	.50
2002	.13	.13	.13	.13	.52
2003	.135	.135	.135	.135	.54
2004	.145	.145	.145	.145	.58

INSTITUTIONAL DECISIONS

	4Q'03	1Q'04	2Q'04
to Buy	5	2	1
to Sell	4	4	6
Hld's(000)	663	661	541

ASSETS ($mill.)	2002	2003	6/30/04
Cash Assets	.0	.0	.0
Receivables	2.8	3.2	3.2
Inventory	.5	.6	.7
Other	.4	.3	.7
Current Assets	3.7	4.1	4.6
Property, Plant & Equip, at cost	127.7	139.1	--
Accum Depreciation	21.0	22.6	--
Net Property	106.7	116.5	130.9
Other	8.0	6.9	7.3
Total Assets	118.4	127.5	142.8
LIABILITIES ($mill.)			
Accts Payable	.7	1.7	3.0
Debt Due	2.8	9.9	14.4
Other	2.0	2.4	2.2
Current Liab	5.5	14.0	19.6

LONG-TERM DEBT AND EQUITY as of 6/30/04

Total Debt $50.0 mill. Due in 5 Yrs. NA
LT Debt $35.6 mill. Including Cap. Leases NA (47% of Cap'l)
Leases, Uncapitalized Annual rentals NA

Pension Liability None in '03 vs. $1.7 mill. in '02

Pfd Stock None Pfd Div'd Paid None

Common Stock 6,444,689 shares (53% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: York Water Company engages in the impounding, purification, and distribution of water in York County, Pennsylvania. The company has two reservoirs, Lake Williams and Lake Redman, which together hold up to 2.75 billion gallons of water. It supplies water for domestic, commercial, industrial, and fire protection purposes. The company serves approximately 149,000 people in 31 municipalities in York County, Pennsylvania. It supplies through the company's own distribution system to the city of York; the boroughs of North York; West York; Manchester; Mount Wolf; New Salem; Hallam; Jacobus; Loganville; Yorkana; Seven Valleys; East Prospect; Jefferson; Glen Rock; New Freedom, Railroad; and portions of the townships of Manchester, East Manchester, West Manchester, North Codorus, Shrewsbury, North Hopewell, Hopewell, Springettsbury, Spring Garden, Conewago, Springfield, York, Hellam, Windsor, Lower Windsor, Dover, and Jackson. Has 92 employees. C.E.O. & President: William Morris, Inc.: PA. Address: 130 East Market Street, York, PA 17401. Tel.: (717) 845-3601. Internet: http://www.yorkwater.com. A.Z

October 29, 2004

TOTAL SHAREHOLDER RETURN

Dividends plus appreciation as of 9/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-5.21%	-13.50%	5.12%	56.16%	102.10%

Aqua Illinois, Inc. - Oak Run Division
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected Based on the Basis of Least Relative Distance
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	6.1 %	6.1 %	6.1 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.5 (2)	0.5 (2)	0.5 (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	6.6 %	6.6 %	6.6 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.0 (3)	0.0 (3)	0.1 (4)
5.	Adjusted Prospective Bond Yield	6.6	6.6	6.7
6.	Equity Risk Premium (5)	4.0	4.2	4.2
7.	Risk Premium Derived Common Equity Cost Rate	10.6 %	10.8 %	10.9 %

Notes:
(1) Derived in Note (3) on page 6 of this Schedule.
(2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.48%, rounded to 0.5% from page 4 of this Schedule.
(3) No adjustment necessary as the average Moody's bond rating of the proxy group is A2.
(4) One-third of the average yield spread of Baa over A rated public utility bonds of 0.28% (1 / 3 x 0.28% = 0.09%, rounded to 0.1%) from page 4 of this Schedule in order to reflect the average A3 Moody's bond rating of the proxy group.
(4) From page 5 of this Schedule.

Aqua Illinois, Inc. - Oak Run Division
Comparison of Bond Ratings and Business Profile for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	November 2004 Moody's Bond Rating		November 2004 Standard & Poor's Bond Rating				Standard & Poor's Business Position / Profile (2)
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	Credit Rating	Numerical Weighting (1)	
Proxy Group of Six C. A. Turner Water Companies							
American States Water Co. (3)	A2	6	A-	7	A-	7	3
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2
Artesian Resources, Inc.	NR	--	NR	--	NR	--	--
California Water Service Group (5)	A2	6	NR	--	A+	5	3
Middlesex Water Company	NR	--	A+	5	A	6	3
York Water Company	NR	--	NR	--	A-	5	2
Average	A2	6.0	A+	5.3	A+	5.6	2.6
Proxy Group of Three Value Line (Standard Edition) Water							
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
California Water Service Group (5)	A2	6	NR	--	A+	5	3.0
Average	A2	6.0	A+ / A	5.5	A	5.7	2.7
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance							
AGL Resources, Inc. (6)	A3	7	A-	7	A-	7	2.0
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
California Water Services Group (5)	A2	6	NR	--	A+	5	3.0
Cinergy Corp. (6)	Baa1	8	BBB+	8	BBB+	8	5.0
Consolidated Edison, Inc. (7)	A1	5	A	6	A	6	2.0
Dominion Resources, Inc. (8)	A2 / A3	6.5	A- / BBB+	7.5	A- / BBB+	8	6.0
Green Mountain Power Corp.	Baa1	8	BBB	9	BBB	9	5.0
KeySpan Corp. (9)	A2	6	A+	5	A	6	2.0
Middlesex Water Company	NR	--	A+	5	A	6	3.0
Northwest Natural Gas Co.	A2	6	A	6	A	6	1.0
Pinnacle West Capital Corp. (10)	Baa1	8	BBB	9	BBB	9	5.0
PNM Resources, Inc. (11)	Baa2	9	BBB	9	BBB	9	6.0
Southern Company (12)	A1	5	A+	5	A	6	4.0
Southwest Water Company	NR	--	NR	--	NR	--	--
Average	A3	6.7	A	6.7	A-	6.9	3.5

Notes:
(1) From page 3 of this Schedule.
(2) From Standard & Poor's U.S. Utilities and Power Ranking List, December 2, 2004.
(3) Ratings and business profile are those of Southern California Water Company
(4) Ratings and business profile are those of Aqua Pennsylvania, Inc.
(5) Ratings and business profile are those of California Water Service Company.
(6) Ratings are business profile are those of Atlanta Gas Light Company.
(7) Ratings and business profile are a composite of those of Consolidated Edision of NY, Orange & Rockland Utilities, and Rockland Electric Co.
(8) Ratings and business profile are a composite of those of Consolidated Natural Gas and Virginia Electric Power.
(9) Ratings and business profile are a composite of those of Boston Gas Co., Colonial Gas Co., and Keyspan Energy Delivery - Long Island.
(10) Ratings and business profile are those of Arizona Public Service Company.
(11) Ratings and business profile are those of Public Service Co. of New Mexico.
(12) Ratings and business profile are a composite of those of Alabama Power Co., Georgia Power Co., Gulf Power Co., Mississippi Power Co., and Savannah Electric & Power Co.

Source of Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Aqua Illinois, Inc. – Oak Run Division
Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-

Moody's
Comparison of Interest Rate Trends
for the Three Months Ending October 2004 (1)

Years	Corporate Bonds Aaa Rated	Public Utility Bonds Aa Rated	Public Utility Bonds A Rated	Public Utility Bonds Baa Rated	Spread - Corporate v. Public Utility Bonds: Aa (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds: A (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds: Baa (Pub. Util.) over Aaa (Corp.)	Spread - Public Utility Bonds: A over Aa	Spread - Public Utility Bonds: Baa over A
August-04	5.65 %	5.95 %	6.14 %	6.45 %					
September-04	5.46	5.79	5.98	6.27					
October-04	5.47	5.74	5.94	6.17					
Average of Last 3 Months	5.53 %	5.83 %	6.02 %	6.30 %	0.30 %	0.49 %	0.77 %	0.19 %	0.28 %
Average Spread (2)					0.30 %	0.49 %	0.77 %	0.19 %	0.28 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record , November 2004, Vol. 71, No. 11

Aqua Illinois, Inc. - Oak Run Division
Judgment of Equity Risk Premium for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected Based on the Basis of Least Relative Distance
1.	Calculated equity risk premium based on the total market using the beta approach (1)	3.8 %	4.1 %	4.1 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	4.2	4.2	4.2
3.	Average equity risk premium	4.0 %	4.2 %	4.2 %

Notes: (1) From page 6 of this Schedule.
(2) From page 8 of this Schedule.

Aqua Illinois, Inc. - Oak Run Division
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected Based on the Basis of Least Relative Distance
1.	Arithmetic mean total return rate on the Standard & Poor's 500 Composite Index - 1926-2003 (1)	12.4 %	12.4 %	12.4 %
2.	Arithmetic mean yield on Aaa and Aa Corporate Bonds 1926-2003 (2)	(6.1)	(6.1)	(6.1)
3.	Historical Equity Risk Premium	6.3 %	6.3 %	6.3 %
4.	Forecasted 3-5 year Total Annual Market Return (3)	11.2 %	11.2 %	11.2 %
5.	Prospective Yield an Aaa Rated Corporate Bonds (4)	(6.1)	(6.1)	(6.1)
6.	Forecasted Equity Risk Premium	5.1 %	5.1 %	5.1 %
7.	Average of Historical and Forecasted Equity Risk Premium (5)	5.7 %	5.7 %	5.7 %
8.	Adjusted Value Line Beta (6)	0.66	0.72	0.72
9.	Beta Adjusted Equity Risk Premium	3.8 %	4.1 %	4.1 %

Notes:
(1) From Stocks, Bonds, Bills and Inflation - 2004 Yearbook Valuation Edition, Ibbotson Associates, Inc., Chicago, IL, 2004.

(2) From Moody's Industrial Manual and Mergent Bond Record Monthly Update.

(3) From Note 1, page 4 of Aqua Schedule 3.15.

(4) Average forecast based upon six quarterly estimates of Aaa rated corporate bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated December 1, 2004 (see page 7 of this Schedule). The estimates are detailed below.

Fourth Quarter 2004	5.6 %
First Quarter 2005	5.8
Second Quarter 2005	6.0
Third Quarter 2005	6.2
Fourth Quarter 2005	6.4
First Quarter 2006	6.5
Average	6.1 %

(5) Average of the Historical Equity Risk Premium of 6.3% from Line No. 3 and the Forecasted Equity Risk Premium of 5.1% from Line No. 6 [(6.3% + 5.1%) / 2 = 5.7%].

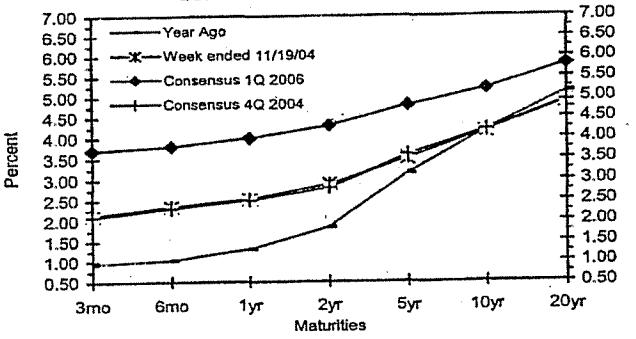
(5) From page 9 of this Schedule.

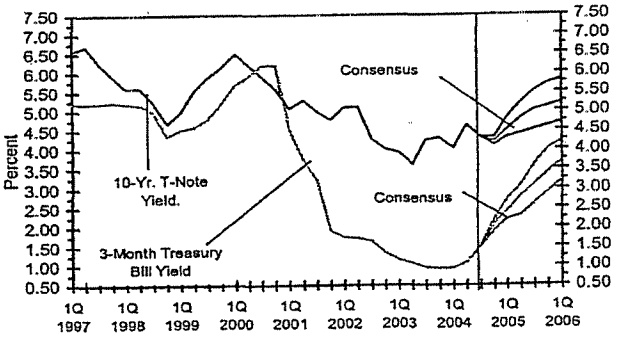
Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

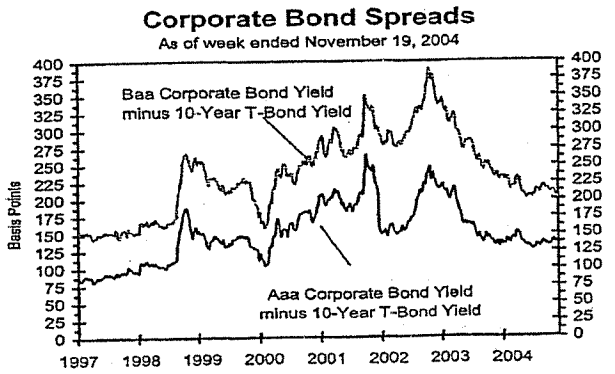
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			Latest Q	4Q	1Q	2Q	3Q	4Q	1Q
Interest Rates	Nov.19	Nov.12	Nov.5	Oct.29	Oct.	Sep.	Aug.	3Q 2004	2004	2005	2005	2005	2005	2006
Federal Funds Rate	2.00	1.79	1.78	1.74	1.76	1.61	1.43	1.43	2.0	2.4	2.7	3.1	3.4	3.7
Prime Rate	5.00	4.79	4.75	4.75	4.75	4.75	4.42	4.47	5.0	5.4	5.7	6.1	6.4	6.7
LIBOR, 3-mo.	2.32	2.28	2.20	2.14	2.08	1.89	1.73	1.74	2.2	2.6	3.0	3.3	3.7	3.9
Commercial Paper, 1-mo.	2.02	2.00	1.92	1.85	1.79	1.67	1.48	1.48	2.0	2.5	2.8	3.2	3.5	3.8
Treasury bill, 3-mo.	2.13	2.08	1.99	1.91	1.79	1.68	1.50	1.51	2.1	2.4	2.8	3.1	3.4	3.7
Treasury bill, 6-mo.	2.35	2.30	2.21	2.12	2.05	1.91	1.76	1.79	2.3	2.7	3.0	3.3	3.6	3.8
Treasury bill, 1 yr.	2.53	2.47	2.35	2.27	2.23	2.12	2.02	2.08	2.5	2.9	3.2	3.6	3.8	4.0
Treasury note, 2 yr.	2.89	2.82	2.65	2.57	2.58	2.53	2.51	2.56	2.8	3.2	3.5	3.8	4.1	4.3
Treasury note, 5 yr.	3.52	3.53	3.39	3.30	3.35	3.36	3.47	3.51	3.6	3.9	4.2	4.4	4.6	4.8
Treasury note, 10 yr.	4.17	4.22	4.12	4.05	4.10	4.13	4.28	4.30	4.2	4.5	4.8	5.0	5.1	5.2
Treasury note, 20 yr.	4.88	4.95	4.85	4.79	4.85	4.89	5.07	5.07	4.9	5.2	5.4	5.5	5.7	5.8
Corporate Aaa bond	5.48	5.59	5.50	5.42	5.47	5.46	5.65	5.64	5.6	5.8	6.0	6.2	6.4	6.5
Corporate Baa bond	6.18	6.25	6.19	6.15	6.21	6.27	6.46	6.45	6.3	6.6	6.8	6.9	7.1	7.2
State & Local bonds	4.52	4.58	4.45	4.44	4.49	4.56	4.70	4.71	4.6	4.8	4.9	5.1	5.2	5.2
Home mortgage rate	5.74	5.76	5.70	5.64	5.72	5.76	5.87	5.90	5.8	6.0	6.3	6.4	6.6	6.7

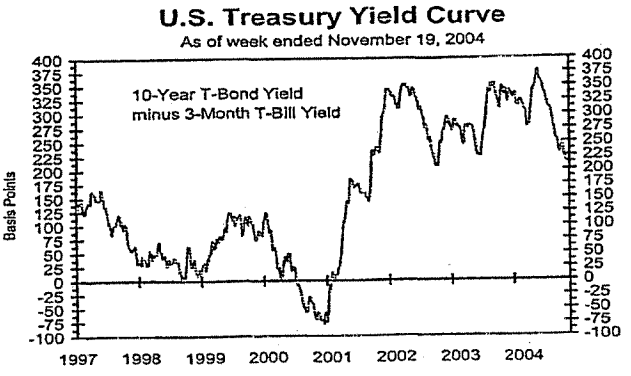
	History								Consensus Forecasts-Quarterly Avg.					
	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
Key Assumptions	2002	2003	2003	2003	2003	2004	2004	2004	2004	2005	2005	2005	2005	2006
Major Currency Index	100.0	95.1	90.8	90.7	87.8	85.3	88.0	86.5	82.4	81.0	80.3	80.1	81.0	81.3
Real GDP	0.7	1.9	4.1	7.4	4.2	4.5	3.3	3.7	3.7	3.3	3.6	3.6	3.5	3.3
GDP Price Index	2.0	2.7	1.1	1.4	1.6	2.8	3.2	1.3	2.1	2.1	2.0	2.1	2.1	2.2
Consumer Price Index	2.0	3.8	0.7	2.4	0.7	3.5	4.8	1.9	2.9	2.3	2.3	2.4	2.4	2.5

[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).









Aqua Illinois, Inc. - Oak Run Division
Derivation of Mean Equity Risk Premium Based on a Study
Using Holding Period Returns of Public Utilities

Line No.		Over A Rated Public Utility Bonds AUS Consultants - Utility Services Study (1)
		1
Time Period		1928-2003
1.	Arithmetic Mean Holding Period Returns (2): Standard & Poor's Public Utility Index	10.8 %
2.	Arithmetic Mean Yield on: A Rated Public Utility Bonds	(6.6)
3.	Equity Risk Premium	4.2 %

Notes: (1) S&P Public Utility Index and Moody's Pubilc Utility Bond Average Annual Yields 1928-2003, (US Consultants - Utility Services, 2004).

(2) Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.

Aqua Illinois, Inc. - Oak Run Division
Value Line Adjusted Betas for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	Value Line Adjusted Beta
Proxy Group of Six C. A. Turner Water Companies	
American States Water Co.	0.70
Aqua America, Inc.	0.75
Artesian Resources Corp.	NA
California Water Service Group	0.70
Middlesex Water Company	0.60
York Water Company	0.55
Average	0.66
Proxy Group of Three Value Line (Standard Edition) Water	
American States Water Co.	0.70
Aqua America, Inc.	0.75
California Water Service Group	0.70
Average	0.72
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	
AGL Resources, Inc.	0.80
American States Water Co.	0.70
Aqua America, Inc.	0.75
California Water Services Group	0.70
Cinergy Corp.	0.80
Consolidated Edison, Inc.	0.60
Dominion Resources, Inc.	0.85
Green Mountain Power Corp.	0.60
KeySpan Corp.	0.75
Middlesex Water Company	0.60
Northwest Natural Gas Co.	0.65
Pinnacle West Capital Corp.	0.85
PNM Resources, Inc.	0.85
Southern Company	0.65
Southwest Water Company	0.65
Average	0.72

NA = Not Available

Source of Information: Value Line Investment Survey,
September 17, October 1, October 29, November 12,
and December 3, 2004

Aqua Illinois, Inc. - Oak Run Division
of the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
		Traditional Capital Asset Pricing Model		
1.	Risk-Free Rate (1)	5.4 %	5.4 %	5.4 %
2.	Average Company-Specific Market Premium (2)	4.3	4.7	4.7
3.	Capital Asset Pricing Model Derived Company Equity Cost Rate	9.7 %	10.1 %	10.1 %
		Empirical Capital Asset Pricing Model		
4.	Risk-Free Rate (1)	5.4 %	5.4 %	5.4 %
5.	Average Company-Specific Market Premium (3)	4.8	5.1	5.1
6.	Capital Asset Pricing Model Derived Company Equity Cost Rate	10.2 %	10.5 %	10.5 %
7.	Conclusion	10.0 %	10.3 %	10.3 %

Notes: (1) Developed in note 2 of page 4 of this Schedule.
(2) Developed on page 2 of this Schedule.
(3) Developed on page 3 of this Schedule

Aqua Illinois, Inc. - Oak Run Division
Indicated Common Equity Cost Rate Through Use
of the Capital Asset Pricing Model

	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 6.5% (1)	CAPM Result Including Risk-Free Rate of 5.4% (2)
		Traditional Capital Asset Pricing Model (3)	
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	0.70	4.6 %	10.0 %
Aqua America, Inc.	0.75	4.9	10.3
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.70	4.6	10.0
Middlesex Water Company	0.60	3.9	9.3
York Water Company	0.55	3.6	9.0
Average	0.66	4.3 %	9.7 % (4)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	0.70	4.6 %	10.0 %
Aqua America, Inc.	0.75	4.9	10.3
California Water Service Group	0.70	4.6	10.0
Average	0.72	4.7 %	10.1 % (4)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			
AGL Resources, Inc.	0.80	5.2 %	10.6 %
American States Water Co.	0.70	4.6	10.0
Aqua America, Inc.	0.75	4.9	10.3
California Water Services Group	0.70	4.6	10.0
Cinergy Corp.	0.80	5.2	10.6
Consolidated Edison, Inc.	0.60	3.9	9.3
Dominion Resources, Inc.	0.85	5.5	10.9
Green Mountain Power Corp.	0.60	3.9	9.3
KeySpan Corp.	0.75	4.9	10.3
Middlesex Water Company	0.60	3.9	9.3
Northwest Natural Gas Co.	0.65	4.2	9.6
Pinnacle West Capital Corp.	0.85	5.5	10.9
PNM Resources, Inc.	0.85	5.5	10.9
Southern Company	0.65	4.2	9.6
Southwest Water Company	0.65	4.2	9.6
Average	0.72	4.7 %	10.1 % (4)

See page 4 for notes.

Aqua Illinois, Inc. - Oak Run Division
Indicated Common Equity Cost Rate Through Use
of the Capital Asset Pricing Model

	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 6.5% (1)	CAPM Result Including Risk-Free Rate of 5.4% (2)
		Empirical Capital Asset Pricing Model (5)	
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	0.70	5.0 %	10.4 %
Aqua America, Inc.	0.75	5.3	10.7
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.70	5.0	10.4
Middlesex Water Company	0.60	4.6	10.0
York Water Company	0.55	4.3	9.7
Average	0.66	4.8 %	10.2 % (4)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	0.70	5.0 %	10.4 %
Aqua America, Inc.	0.75	5.3	10.7
California Water Service Group	0.70	5.0	10.4
Average	0.72	5.1 %	10.5 % (4)
Proxy Group of Fifteen Utilities Selected on the Basis of Least			
AGL Resources, Inc.	0.80	5.5 %	10.9 %
American States Water Co.	0.70	5.0	10.4
Aqua America, Inc.	0.75	5.3	10.7
California Water Services Group	0.70	5.0	10.4
Cinergy Corp.	0.80	5.5	10.9
Consolidated Edison, Inc.	0.60	4.6	10.0
Dominion Resources, Inc.	0.85	5.8	11.2
Green Mountain Power Corp.	0.60	4.6	10.0
KeySpan Corp.	0.75	5.3	10.7
Middlesex Water Company	0.60	4.6	10.0
Northwest Natural Gas Co.	0.65	4.8	10.2
Pinnacle West Capital Corp.	0.85	5.8	11.2
PNM Resources, Inc.	0.85	5.8	11.2
Southern Company	0.65	4.8	10.2
Southwest Water Company	0.65	4.8	10.2
Average	0.72	5.1 %	10.5 % (4)

See page 4 for notes.

Aqua Illinois, Inc. – Oak Run Division
Development of the Market-Required Rate of Return on Common Equity Using
the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies, the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Adjusted to Reflect a Forecasted Risk-Free Rate and Market Return

Notes:

(1) From the three previous month-end (Sep. '04 –Nov. '04), as well as a recently available (Dec. 3, 2004), Value Line Summary & Index, a forecasted 3-5 year total annual market return of 11.2% can be derived by averaging the 3-month and spot forecasted total 3-5 year total appreciation, converting it into an annual market appreciation and adding the Value Line average forecasted annual dividend yield.

The 3-5 year average total market appreciation of 44% produces a four-year average annual return of 9.54% ($(1.42^{25}) - 1$). When the average annual forecasted dividend yield of 1.64% is added, a total average market return of 11.18%, rounded to 11.2%, (1.64% + 9.54%) is derived.

The 3-month and spot forecasted total market return of 11.2% minus the risk-free rate of 5.4% (developed in Note 2) is 5.8% (11.2% - 5.4%). The Ibbotson Associates calculated market premium of 7.2% for the period 1926-2003 results from a total market return of 12.4% less the average income return on long-term U.S. Government Securities of 5.2% (12.4% - 5.2% = 7.2%). This is then averaged with the 7.2% Value Line market premium resulting in a 6.5% market premium. The 6.5% market premium is then multiplied by the beta in column 1 of page 2 of this Schedule.

(2) Average forecast based upon six quarterly estimates of 20-year Treasury Bond yields per the consensus of nearly 50 economists reported in the Blue Chip Financial Forecasts dated December 1, 2004 (see page 7 of Aqua Schedule 3.14). The estimates are detailed below:

	20-Year Treasury Bond Yield
Fourth Quarter 2004	4.9%
First Quarter 2005	5.2
Second Quarter 2005	5.4
Third Quarter 2005	5.5
Fourth Quarter 2005	5.7
First Quarter 2006	5.8
Average	5.4%

(3) The traditional Capital Asset Pricing Model (CAPM) is applied using the following formula:

$R_S = R_F + \beta (R_M - R_F)$

Where R_S = Return rate of common stock
R_F = Risk Free Rate
β = Value Line Adjusted Beta
R_M = Return on the market as a whole

(4) Includes only those indicated common equity cost rates which are above 8.6%, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Aqua Schedule 3.14).

(5) The empirical CAPM is applied using the following formula:

$R_S = R_F + .25 (R_M - R_F) + .75 \beta (R_M - R_F)$

Where R_S = Return rate of common stock
R_F = Risk-Free Rate
β = Value Line Adjusted Beta
R_M = Return on the market as a whole

Source of Information:
Value Line Summary & Index
Blue Chip Financial Forecasts, December 1, 2004
Value Line Investment Survey, September 17, October 1, October 29, November 12, and December 3, 2004 Standard Edition and Small and Mid-Cap Edition
Stocks, Bonds, Bills and Inflation – Valuation Edition 2004 Yearbook, Ibbotson Associates, Inc., Chicago, IL

Aqua Illinois, Inc. - Oak Run Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-Nine Non-Utility Companies Comparable to
the Proxy Group of Six C. A. Turner Water Companies (1)

Proxy Group of Seventy-Nine Non-Utility Companies Comparable to the Proxy Group of Six C. A. Turner Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
21st Century Ins. Group	0.85	0.73	4.1046	0.1063	12.1 %	1.6 %	3.7 %	7.4 %	8.5 %	6.7 %	(0.92)	13.0 %	(0.65)
ABM Industries Inc.	0.70	0.51	3.8382	0.0994	14.0	13.7	12.5	12.1	8.2	12.1	(0.55)	13.5	(0.48)
Abbott Labs.	0.80	0.64	4.0020	0.1036	34.7	32.6	32.5	30.4	26.6	31.3	0.74	21.0	0.58
AmerisourceBergen	0.75	0.59	4.1861	0.1383	50.0	35.1	4.9	10.8	11.2	22.4	0.14	10.5	(0.90)
Annaly Mortgage Mgmt.	0.65	0.46	3.6641	0.0923	17.6	12.2	13.8	20.3	16.7	15.9	(0.30)	15.5	(0.20)
Applied Ind'l Techn.	0.75	0.56	3.9603	0.1025	6.8	10.4	9.0	4.9	5.9	7.4	(0.87)	13.0	(0.55)
Archer Daniels Mid'd	0.70	0.54	3.7599	0.0973	4.5	4.9	8.1	6.8	6.2	5.7	(0.99)	10.0	(0.97)
Arrow Int'l	0.60	0.33	3.9025	0.1010	15.8	17.0	14.3	13.1	13.3	14.7	(0.36)	12.5	(0.62)
Ball Corp.	0.85	0.73	3.9152	0.1014	15.1	16.8	21.0	32.3	28.4	22.9	0.18	24.5	1.07
Bard (C.R.)	0.75	0.59	3.7710	0.0976	20.5	20.4	18.2	20.1	19.5	19.7	(0.04)	22.0	0.72
Barnes Group	0.75	0.60	3.8747	0.1003	15.8	17.7	9.6	13.0	10.3	13.3	(0.47)	14.0	(0.41)
Beckman Coulter	0.60	0.36	4.0464	0.1047	46.5	36.5	27.3	26.9	20.3	31.5	0.78	14.0	(0.41)
Becton Dickinson	0.75	0.61	3.9551	0.1024	21.8	20.1	18.8	19.3	19.6	19.9	(0.03)	17.5	0.08
Berry Petroleum 'A'	0.70	0.48	3.9777	0.1030	15.5	25.8	14.3	17.5	17.5	18.1	(0.16)	15.5	(0.20)
Blyth Inc.	0.75	0.59	4.0456	0.1047	24.3	23.0	16.5	16.9	17.0	19.5	(0.05)	14.0	(0.41)
Bob Evans Farms	0.85	0.72	3.9148	0.1013	12.3	11.1	12.5	13.4	11.4	12.1	(0.65)	12.0	(0.69)
CLARCOR Inc.	0.85	0.71	3.7284	0.0965	16.8	16.6	15.3	14.8	14.7	15.6	(0.32)	13.5	(0.48)
ChoicePoint Inc.	0.85	0.75	4.0305	0.1043	19.1	16.1	16.3	19.1	16.1	17.3	(0.20)	16.0	(0.13)
Coca-Cola	0.65	0.41	3.8732	0.1003	34.0	39.4	35.0	34.7	34.0	35.4	1.02	33.5 (4)	2.34
Coca-Cola Bottling	0.50	0.19	3.9364	0.1019	14.7	9.5	38.5	69.0	58.5	38.0	1.20	41.0 (4)	3.39
ConAgra Foods	0.70	0.52	3.5237	0.0912	23.8	27.0	17.1	16.2	16.2	20.9	0.04	18.0	0.30
Constellation Brands	0.65	0.45	4.2245	0.1094	16.5	16.8	14.4	10.4	11.2	14.7	(0.38)	11.5	(0.76)
Corn Products Int'l	0.75	0.62	3.7903	0.0981	7.5	6.4	6.7	7.6	8.3	7.3	(0.88)	10.5	(0.90)
Curtiss-Wright	0.70	0.48	3.5467	0.0918	12.3	13.1	11.6	10.1	10.9	11.6	(0.59)	12.5	(0.62)
Dean Foods	0.65	0.40	3.4561	0.0895	20.5	20.1	8.5	17.0	12.9	16.7	(0.31)	10.5	(0.90)
Dentsply Int'l	0.70	0.54	3.3077	0.0856	19.2	19.4	18.0	17.5	15.4	17.9	(0.16)	13.5	(0.48)
Dionex Corp.	0.80	0.68	4.1881	0.1084	34.7	28.7	24.5	21.0	19.7	25.7	0.36	26.0	1.26
ESCO Technologies	0.75	0.60	4.2075	0.1089	3.5	5.4	6.1	7.1	12.0	6.8	(0.91)	11.0	(0.83)
Fortune Brands	0.85	0.72	3.6381	0.0942	12.4	17.1	17.8	21.2	20.9	17.9	(0.16)	16.5	(0.06)
Franklin Electric	0.65	0.41	3.8328	0.0992	27.8	20.9	22.0	21.0	17.9	21.9	0.11	17.5	0.08
Gen'l Dynamics	0.75	0.62	3.9923	0.1033	22.5	23.6	20.8	20.2	16.7	20.8	0.03	15.0	(0.27)
Gillette	0.65	0.47	3.9884	0.1035	41.2	65.0	48.9	53.5	61.6	54.1 (4)	2.26	39.5 (4)	3.18
Golden West Fin'l	0.85	0.75	3.5952	0.0931	14.8	14.8	19.1	19.1	18.6	17.3	(0.20)	22.5	0.79
HNI Corp.	0.85	0.74	3.6729	0.0951	19.8	18.5	15.2	14.1	13.6	16.3	(0.27)	19.0	0.30
Harland (John H.)	0.70	0.50	4.0667	0.1053	25.3	16.7	19.3	22.4	22.0	21.1	0.05	15.5	(0.20)
Hillenbrand Inds.	0.80	0.67	3.4433	0.0891	17.7	18.7	17.7	19.8	21.1	19.0	(0.09)	21.5	0.65
Int'l Flavors & Frag.	0.75	0.59	3.7525	0.0971	22.0	23.7	25.8	32.0	28.9	26.1	0.39	20.5	0.51
Invacare Corp.	0.80	0.67	3.8611	0.1000	15.8	15.1	15.8	13.5	11.8	14.4	(0.40)	12.5	(0.62)
Kellogg	0.55	0.31	3.6308	0.0940	74.5	72.6	61.1	79.4	54.6	68.4 (4)	3.25	28.0	1.56
Kimball Int'l 'B'	0.80	0.63	4.2659	0.1104	12.0	10.3	8.2	5.8	1.3	7.5	(0.88)	9.5	(1.04)
Lancaster Colony	0.75	0.59	3.7450	0.0969	22.9	24.6	19.6	16.8	16.1	20.0	(0.02)	16.0	(0.13)
Lance Inc.	0.65	0.46	3.9241	0.1016	13.7	12.6	13.4	11.0	13.1	12.8	(0.61)	15.5	(0.20)
Lawson Products	0.65	0.42	3.6513	0.0945	15.9	16.3	8.7	7.7	9.7	11.7	(0.58)	14.0	(0.41)
Libbey Inc.	0.75	0.59	4.2544	0.1101	47.3	35.2	23.8	28.1	20.8	30.6	0.70	17.0	0.01
Lincoln Elec Hldgs.	0.80	0.68	4.0224	0.1041	20.7	19.3	16.6	17.2	11.7	17.1	(0.22)	20.0	0.44
Lockheed Martin	0.60	0.34	4.2031	0.1088	9.0	6.0	10.6	18.0	15.8	11.9	(0.57)	22.0	0.72
Matthews Int'l	0.65	0.41	3.7430	0.0969	21.8	22.0	21.0	21.1	17.5	20.7	0.03	14.5	(0.34)
Murphy Oil Corp.	0.85	0.74	3.9871	0.1032	9.4	24.3	17.6	6.4	13.1	14.2	(0.41)	9.5	(1.04)
New Plan Excel R'ty	0.65	0.48	3.3158	0.0858	9.2	7.9	7.0	7.8	8.1	8.0	(0.83)	12.5	(0.62)
Northrop Grumman	0.60	0.38	3.8481	0.0996	14.8	15.9	5.5	4.8	4.8	9.2	(0.75)	10.5	(0.90)
Occidental Petroleum	0.65	0.73	3.4225	0.0886	7.3	27.8	23.8	16.2	20.3	19.0	(0.09)	11.5	(0.76)
PepsiAmericas Inc.	0.75	0.58	3.7762	0.0976	6.2	5.8	6.3	9.4	9.8	7.5	(0.86)	9.5	(1.04)
Pfizer Inc.	0.85	0.71	3.3984	0.0880	38.2	40.4	45.6	47.9	19.5	38.3	1.22	24.0	1.00
Procter & Gamble	0.60	0.36	4.2173	0.1092	34.4	34.4	36.8	36.9	35.4	35.6	1.03	31.0 (4)	1.99
Quaker Chemical	0.80	0.63	3.8801	0.1007	18.0	20.2	16.8	16.2	13.2	17.1	(0.22)	12.5	(0.62)

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Aqua Illinois, Inc. - Oak Run Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-Nine Non-Utility Companies Comparable to
the Proxy Group of Six C. A. Turner Water Companies (1)

Proxy Group of Seventy-Nine Non-Utility Companies Comparable to the Proxy Group of Six C. A. Turner Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
Ralcorp Holdings	0.55	0.29	3.4046	0.0881	11.2	10.8	8.9	12.3	13.0	11.4	(0.60)	11.5	(0.76)
Ruddick Corp.	0.85	0.70	3.7843	0.0980	11.4	10.8	10.8	12.3	12.1	11.5	(0.59)	12.5	(0.62)
Ryan's Family	0.75	0.58	4.2258	0.1094	14.7	14.9	14.2	16.7	14.0	14.7	(0.38)	13.0	(0.55)
SLM Corporation	0.80	0.68	3.5721	0.0925	47.9	34.8	37.3	31.9	33.3	37.0	1.13	25.5	1.21
Sara Lee Corp.	0.60	0.36	3.4174	0.0885	88.3	92.0	99.9	63.8	59.1	80.6 (4)	4.07	32.0 (4)	2.13
Schulman (A.)	0.80	0.68	4.2294	0.1095	13.4	11.7	3.9	9.0	4.2	8.4	(0.80)	8.0	(1.25)
Selective Ins. Group	0.80	0.64	3.6719	0.0951	9.4	4.8	4.5	6.1	7.7	6.6	(0.93)	13.0	(0.55)
Sensient Techn.	0.70	0.54	3.6751	0.0951	18.8	18.7	15.1	16.2	13.4	16.0	(0.29)	13.0	(0.55)
ServiceMaster Co.	0.75	0.55	4.0512	0.1049	18.8	15.9	9.4	14.0	19.4	15.5	(0.32)	22.5	0.79
Sigma-Aldrich	0.80	0.69	4.0344	0.1044	11.8	16.2	17.4	14.8	18.3	15.9	(0.30)	17.8	0.08
Smucker (J.M.)	0.65	0.41	3.7441	0.0969	11.4	13.4	12.2	9.3	10.0	11.3	(0.61)	10.0	(0.97)
Standex Int'l	0.80	0.63	3.8767	0.1004	16.9	16.5	14.5	11.4	11.1	14.9	(0.38)	16.5	0.23
Stryker Corp.	0.75	0.58	4.0975	0.1061	23.9	25.9	25.7	23.8	21.0	24.1	0.26	31.5 (4)	2.06
Sysco Corp.	0.80	0.65	3.5151	0.0910	25.4	25.8	27.8	31.9	35.4	29.3	0.81	28.5	1.63
Tecumseh Products 'A'	0.80	0.62	3.9302	0.1017	13.1	6.6	4.4	5.5	3.8	6.7	(0.92)	10.0	(0.97)
Tennant Co.	0.75	0.60	3.6385	0.0942	17.7	18.2	3.1	8.0	8.5	11.1	(0.62)	12.0	(0.69)
Thomas Inds.	0.75	0.56	3.8254	0.0990	12.5	13.5	11.9	10.4	9.7	11.6	(0.59)	6.5	(1.46)
Thomburg Mtg.	0.70	0.54	3.5956	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.60)	14.0	(0.41)
Universal Corp.	0.70	0.49	3.7086	0.0960	23.6	23.7	21.4	18.1	18.3	21.0	0.05	17.0	0.01
WD-40 Co.	0.70	0.51	4.2230	0.1093	39.3	38.9	30.6	30.6	27.9	33.4	0.89	21.0	0.58
Walgreen Co.	0.85	0.72	3.7280	0.0965	17.9	17.9	16.7	16.3	16.1	17.0	(0.22)	17.0	0.01
Wendy's Int'l	0.75	0.54	3.9883	0.1032	15.6	16.1	16.6	16.1	13.4	15.8	(0.30)	14.0	(0.41)
West Pharmac. Svcs.	0.70	0.49	3.6054	0.0933	15.7	6.3	11.8	9.4	10.8	10.8	(0.66)	12.0	(0.69)
Zimmer Holdings	0.75	0.59	3.8939	0.1268	42.7	73.6	242.4	70.4	9.3	87.7 (4)	4.55	14.5	(0.34)
Average for the Non-Utility Group	0.73	0.56	3.8362	0.1000									
Average for the Proxy Group of Six C. A. Turner Water Companies	0.66	0.46	3.7805 (5)	0.1014									
Mean										17.5%		15.4%	
Conclusion (6)											16.5% (6)		
Conservative Mean (7)										14.8%		13.9%	
Conservative Conclusion (8)											14.2% (8)		

See pages 5 and 6 for notes.

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Aqua Schedule 3.16
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Aqua Illinois, Inc. - Oak Run Division
Comparable Earnings Analysis
for a Proxy Group of Ninety-Seven Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)

Proxy Group of Ninety-Seven Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
21st Century Ins. Group	0.85	0.73	4.1045	0.1063	12.1 %	1.8 %	3.7 %	7.4 %	8.5 %	6.7 %	(0.89)	13.0 %	(0.54)
ABM Industries Inc.	0.70	0.51	3.8382	0.0994	14.0	13.7	12.5	12.1	8.2	12.1	(0.52)	13.5	(0.46)
Abbott Labs.	0.80	0.64	4.0020	0.1036	34.7	32.5	32.6	30.4	28.6	31.3	0.74	21.0	0.66
Albemarle Corp.	0.85	0.77	3.1649	0.0819	16.6	17.2	11.7	11.7	12.6	14.0	(0.39)	14.0	(0.39)
Allied Capital Corp.	0.85	0.76	3.6577	0.0947	14.6	13.6	14.8	14.7	10.0	13.6	(0.42)	15.0	(0.24)
Amerada Hess	0.90	0.79	4.0009	0.1036	10.1	25.4	19.3	12.8	8.5	15.4	(0.30)	8.5	(1.21)
Anheuser-Busch	0.60	0.36	3.2163	0.0833	35.8	37.8	42.0	63.4	76.6	51.1 (4)	2.05	35.5 (4)	2.82
Annaly Mortgage Mgmt.	0.65	0.46	3.5841	0.0923	17.6	12.2	13.8	20.3	15.7	15.9	(0.27)	15.5	(0.16)
Applied Ind'l Techn.	0.75	0.56	3.8603	0.1025	6.8	10.4	9.0	4.9	5.9	7.4	(0.83)	13.0	(0.54)
Archer Daniels Mid'd	0.70	0.54	3.7599	0.0973	4.5	4.9	8.1	6.8	8.2	5.7	(0.94)	10.0	(0.99)
Arrow Int'l	0.60	0.33	3.9025	0.1010	15.8	17.0	14.3	13.1	13.3	14.7	(0.35)	12.5	(0.61)
Ball Corp.	0.85	0.73	3.9152	0.1014	15.1	16.6	21.0	32.3	29.4	22.9	0.19	24.5	1.18
Bandag Inc.	0.90	0.82	4.0361	0.1045	13.2	12.7	8.5	11.1	12.8	11.6	(0.55)	12.0	(0.69)
Bard (C.R.)	0.75	0.59	3.7710	0.0976	20.5	20.4	18.2	20.1	19.5	19.7	(0.02)	22.0	0.81
Barnes Group	0.75	0.60	3.8747	0.1003	15.8	17.7	9.6	13.0	10.3	13.3	(0.44)	14.0	(0.39)
Beckman Coulter	0.60	0.36	4.0464	0.1047	46.5	36.5	27.3	26.9	20.3	31.5	0.76	14.0	(0.39)
Becton Dickinson	0.75	0.61	3.9551	0.1024	21.8	20.1	18.8	19.3	19.6	19.9	(0.01)	17.5	0.13
Berry Petroleum 'A'	0.70	0.48	3.9777	0.1030	19.5	25.6	14.3	17.5	17.5	18.1	(0.13)	15.5	(0.16)
Blyth Inc.	0.75	0.59	4.0456	0.1047	24.3	23.0	16.5	16.9	17.0	19.5	(0.03)	14.0	(0.39)
Bob Evans Farms	0.85	0.72	3.9148	0.1013	12.3	11.1	12.5	13.4	11.4	12.1	(0.52)	12.0	(0.69)
CLARCOR Inc.	0.85	0.71	3.7284	0.0965	16.8	16.6	15.3	14.8	14.7	15.6	(0.29)	13.5	(0.46)
ChoicePoint Inc.	0.85	0.75	4.0305	0.1043	19.1	16.1	16.3	19.1	16.1	17.3	(0.18)	16.0	(0.09)
City National Corp.	0.80	0.79	3.3312	0.0862	16.9	17.7	16.4	16.3	15.3	16.9	(0.20)	14.0	(0.39)
Coca-Cola	0.65	0.41	3.8732	0.1003	34.0	39.4	36.0	34.7	34.0	35.4	1.01	33.5 (4)	2.52
Commercial Metals	0.90	0.81	4.0341	0.1044	11.3	11.0	5.8	8.1	3.7	7.8	(0.80)	14.5	(0.31)
ConAgra Foods	0.70	0.52	3.5237	0.0912	23.9	27.0	17.1	18.2	18.2	20.9	0.06	19.0	0.36
ConocoPhillips	0.85	0.75	3.1745	0.0822	10.5	28.4	11.4	5.1	13.4	13.8	(0.41)	8.0	(1.28)
Corn Products Int'l	0.75	0.62	3.7903	0.0981	7.5	8.4	8.7	7.8	8.3	7.3	(0.84)	10.5	(0.91)
Curtiss-Wright	0.70	0.48	3.5467	0.0918	12.3	13.1	11.9	10.1	10.9	11.8	(0.55)	12.5	(0.61)
Dean Foods	0.65	0.40	3.4581	0.0895	20.5	20.1	8.5	17.0	12.6	15.7	(0.26)	10.5	(0.91)
Dentsply Int'l	0.70	0.54	3.3077	0.0856	19.2	19.4	18.0	17.5	15.4	17.9	(0.14)	13.5	(0.46)
Donaldson Co.	0.90	0.81	3.6120	0.0935	23.8	25.1	23.7	22.7	21.3	23.3	0.22	21.5	0.73
Federated Investors	0.90	0.82	3.6584	0.0899	104.4	105.1	72.8	59.8	51.7	78.8 (4)	3.87	29.5	1.93
Ferro Corp.	0.90	0.80	3.5598	0.0921	24.6	23.7	13.0	8.5	5.4	15.0	(0.33)	10.5	(0.91)
Fortune Brands	0.85	0.72	3.6381	0.0942	12.4	17.1	17.8	21.2	20.9	17.9	(0.14)	18.5	(0.01)
Franklin Electric	0.65	0.41	3.8326	0.0992	27.8	20.9	22.0	21.0	17.9	21.8	0.13	17.5	0.13
Gen'l Dynamics	0.75	0.62	3.9923	0.1033	22.6	23.8	20.8	20.2	16.7	20.8	0.05	15.0	(0.24)
Gillette	0.65	0.47	3.9864	0.1035	41.2	65.0	46.9	53.5	61.8	64.1 (4)	2.24	39.5 (4)	3.42
Golden West Fin'l	0.85	0.75	3.5952	0.0931	14.8	14.8	18.1	18.9	18.6	17.2	(0.16)	22.5	0.69
HNI Corp.	0.85	0.74	3.6729	0.0951	19.8	18.5	15.2	14.1	13.8	16.3	(0.24)	19.0	0.38
Harland (John H.)	0.70	0.50	4.0667	0.1053	25.3	16.7	19.3	22.4	22.0	21.1	0.07	15.5	(0.16)
Harte-Hanks	0.80	0.66	3.2423	0.0839	12.6	14.9	14.4	17.0	15.7	14.9	(0.34)	15.0	(0.24)
Hillenbrand Inds.	0.80	0.67	3.4433	0.0891	17.7	18.7	17.7	19.8	21.1	19.0	(0.07)	21.5	0.73
IHOP Corp.	0.85	0.76	3.6811	0.0953	14.2	13.6	12.9	11.2	11.1	12.6	(0.49)	12.0	(0.69)
Int'l Flavors & Frag.	0.75	0.59	3.7525	0.0971	22.0	23.7	25.8	32.0	26.9	26.1	0.40	20.5	0.58
Invacare Corp.	0.80	0.67	3.8611	0.1000	15.8	15.1	15.8	13.5	11.6	14.4	(0.37)	12.5	(0.61)
Johnson & Johnson	0.65	0.46	3.2778	0.0849	26.0	25.5	24.3	30.0	26.8	26.5	0.43	22.5	0.88
Kellogg	0.55	0.31	3.6308	0.0940	74.5	72.6	61.1	79.4	54.5	68.4	3.18	26.0 (4)	1.70
Kirby Corp.	0.90	0.79	3.8446	0.0995	10.4	13.0	13.2	11.9	11.0	11.9	(0.53)	11.5	(0.76)
Lancaster Colony	0.75	0.59	3.7450	0.0969	22.9	24.6	19.6	16.6	16.1	20.0	-	18.0	(0.09)
Lance Inc.	0.65	0.46	3.9241	0.1016	13.7	12.6	13.4	11.0	13.1	12.8	(0.47)	15.5	(0.16)
Lawson Products	0.65	0.42	3.6513	0.0945	15.9	16.3	8.7	7.7	9.7	11.7	(0.55)	14.0	(0.39)
Lincoln Elec Hldgs.	0.80	0.68	4.0224	0.1041	20.7	19.3	16.8	17.2	11.7	17.1	(0.19)	20.0	0.51
Marathon Oil Corp.	0.85	0.76	3.5433	0.0917	9.0	27.0	26.7	11.1	16.7	18.1	(0.13)	14.0	(0.39)
Matthews Int'l	0.65	0.41	3.7430	0.0969	21.8	22.0	21.0	21.1	17.5	20.7	0.05	14.5	(0.31)
McGraw-Hill	0.80	0.65	3.1551	0.0817	23.7	26.2	25.9	26.6	24.6	25.4	0.38	25.0	1.25
Medtronic Inc.	0.90	0.78	3.9651	0.1026	24.7	23.4	23.0	21.8	22.0	23.0	0.20	20.5	0.58
Merck & Co.	0.85	0.77	3.7757	0.0977	44.5	46.0	45.4	39.3	42.3	43.5	1.55	27.0	1.55

Aqua Illinois, Inc. - Oak Run Division
Comparable Earnings Analysis
for a Proxy Group of Ninety-Seven Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)

Proxy Group of Ninety-Seven Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
Mercury General	0.80	0.80	3.3096	0.0857	14.7	10.6	9.8	10.2	14.1	11.9	(0.53)	16.0	0.21
Minerals Techn.	0.90	0.79	3.6285	0.0939	12.8	12.6	10.2	9.1	7.3	10.4	(0.63)	10.5	(0.91)
Murphy Oil Corp.	0.85	0.74	3.9871	0.1032	9.4	24.3	17.6	6.4	13.1	14.2	(0.38)	9.5	(1.08)
New Plan Excel R'lty	0.85	0.46	3.3158	0.0858	9.2	7.9	7.0	7.8	8.1	8.0	(0.79)	12.5	(0.61)
Northrop Grumman	0.60	0.38	3.8461	0.0996	14.8	15.9	5.5	4.8	4.8	9.2	(0.71)	10.5	(0.91)
Occidental Petroleum	0.85	0.73	3.4225	0.0886	7.3	27.8	23.6	16.2	20.3	19.0	(0.07)	11.5	(0.76)
Pactiv Corp.	0.85	0.77	4.0803	0.1061	7.1	9.3	9.8	24.5	21.7	14.5	(0.36)	16.0	(0.09)
People's Bank	0.85	0.72	3.2209	0.0834	14.3	12.3	2.6	5.8	6.4	8.3	(0.77)	10.5	(0.91)
PepsiAmericas Inc.	0.75	0.58	3.7762	0.0978	6.2	9.8	8.3	9.4	9.8	7.5	(0.82)	9.5	(1.08)
PepsiCo Inc.	0.85	0.44	3.1931	0.0827	26.8	30.1	34.6	37.7	30.0	31.8	0.78	32.0 (4)	2.30
Pfizer Inc.	0.85	0.71	3.3964	0.0880	38.2	40.4	45.6	47.9	18.5	38.3	1.20	24.0	1.10
Protective Life	0.80	0.79	3.7503	0.0971	17.7	12.3	10.1	10.0	9.8	12.0	(0.53)	11.0	(0.84)
Quaker Chemical	0.80	0.63	3.8901	0.1007	19.0	20.2	16.8	16.2	13.2	17.1	(0.19)	12.5	(0.61)
Raicorp Holdings	0.55	0.29	3.4046	0.0881	11.2	10.8	9.9	12.3	13.0	11.4	(0.57)	11.5	(0.76)
Ruddick Corp.	0.85	0.70	3.7843	0.0980	11.4	10.6	10.6	12.3	12.1	11.5	(0.66)	12.5	(0.61)
SLM Corporation	0.80	0.68	3.5721	0.0925	47.9	34.8	37.3	31.9	33.3	37.0	1.12	25.5	1.33
Sara Lee Corp.	0.60	0.36	3.4174	0.0885	68.3	92.0	99.9	83.8	58.1	80.8 (4)	3.99	32.0 (4)	2.30
Selective Ins. Group	0.80	0.64	3.8719	0.0951	9.4	4.6	4.5	6.1	7.7	6.5	(0.89)	13.0	(0.54)
Sensient Techn.	0.70	0.54	3.6751	0.0951	18.6	16.7	15.1	16.2	13.4	16.0	(0.26)	13.0	(0.54)
ServiceMaster Co.	0.75	0.55	4.0512	0.1049	18.8	15.8	9.4	14.0	19.4	15.5	(0.30)	22.5	0.88
Sigma-Aldrich	0.80	0.69	4.0344	0.1044	11.8	16.2	17.4	14.8	19.3	15.9	(0.27)	17.5	0.13
Smucker (J.M.)	0.65	0.41	3.7441	0.0969	11.4	13.4	12.2	9.3	10.0	11.3	(0.57)	10.0	(0.99)
Standex Int'l	0.80	0.63	3.8767	0.1004	18.9	18.5	14.5	11.4	11.1	14.9	(0.34)	18.5	0.28
Stryker Corp.	0.75	0.59	4.0975	0.1061	23.9	25.9	25.7	23.8	21.0	24.1	0.27	31.5 (4)	2.22
Sysco Corp.	0.80	0.65	3.5151	0.0910	25.4	25.8	27.8	31.9	35.4	29.3	0.61	28.5	1.76
Tecumseh Products 'A'	0.80	0.62	3.9302	0.1017	13.1	6.6	4.4	5.5	3.8	6.7	(0.88)	10.0	(0.99)
Tennant Co.	0.75	0.60	3.6395	0.0942	17.7	18.2	3.1	8.0	8.5	11.1	(0.59)	12.0	(0.69)
Thomas Inds.	0.75	0.56	3.8254	0.0990	12.5	13.5	11.9	10.4	9.7	11.6	(0.55)	6.5	(1.51)
Thomburg Mtg.	0.70	0.54	3.5956	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.57)	14.5	(0.31)
Toro Co.	0.60	0.69	3.2798	0.0849	12.5	14.3	14.8	17.4	18.5	15.5	(0.30)	27.0	1.55
Union Pacific	0.80	0.78	3.2485	0.0841	8.2	9.0	8.7	9.3	6.5	8.7	(0.74)	9.0	(1.13)
Universal Corp.	0.70	0.49	3.7066	0.0960	23.6	23.7	21.4	18.1	18.3	21.0	0.07	17.0	0.06
Unocal Corp.	0.80	0.78	3.4344	0.0889	6.2	26.6	19.2	10.0	16.0	15.4	(0.30)	14.5	(0.31)
Valspar Corp.	0.80	0.81	3.6618	0.0948	20.9	19.8	7.9	18.3	12.9	15.8	(0.29)	13.0	(0.54)
Walgreen Co.	0.85	0.72	3.7290	0.0965	17.9	17.8	16.7	16.3	16.1	17.0	(0.20)	17.0	0.06
Weis Markets	0.70	0.52	3.2491	0.0841	6.5	7.9	10.1	10.4	9.5	8.3	(0.70)	10.5	(0.91)
Wendy's Int'l	0.75	0.54	3.9883	0.1032	15.6	18.1	18.8	15.1	13.4	15.8	(0.28)	14.0	(0.39)
West Pharmac. Svcs.	0.70	0.49	3.6054	0.0933	15.7	8.3	11.8	6.4	10.6	10.6	(0.62)	12.0	(0.69)
Zimmer Holdings	0.75	0.59	3.8939	0.1268	42.7	73.6	242.4	70.4	9.3	87.7 (4)	4.45	14.5	(0.31)
Average for the Non-Utility Group	0.77	0.62	3.7016	0.0961									
Average for the Proxy Group of Three Value Line (Standard Edition) Water Companies	0.72	0.54	3.6320 (10)	0.0940									
Mean										16.7%		15.5%	
Conclusion (6)											16.1% (6)		
Conservative Mean (7)										14.4%		13.5%	
Conservative Conclusion (8)											14.0% (6)		

See pages 5 and 6 for notes.

Aqua Exhibit No. 3.0
Aqua Schedule 3.16
Page 4 of 8

Aqua Illinois, Inc. - Oak Run Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-One Non-Utility Companies Comparable to
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)

Proxy Group of Seventy-One Non-Utility Companies Comparable to the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
Albemarle Corp.	0.85	0.77	3.1649	0.0819	16.6 %	17.2 %	11.7 %	11.7 %	12.6 %	14.0 %	(0.30)	14.0 %	(0.31)
Alberto Culver 'B'	0.70	0.50	2.9460	0.0763	15.2	15.3	15.0	16.0	15.3	15.4	(0.19)	14.5	(0.24)
Alexander & Baldwin	0.85	0.77	3.1103	0.0805	10.6	11.3	9.5	8.0	10.0	9.9	(0.92)	12.5	(0.64)
Allied Capital Corp.	0.85	0.76	3.6577	0.0947	14.6	13.8	14.8	14.7	10.0	13.6	(0.33)	15.0	(0.16)
Anheuser-Busch	0.60	0.36	3.2183	0.0833	35.6	37.6	42.0	63.4	76.6	51.1 (4)	2.60	36.5 (4)	2.90
Annaly Mortgage Mgmt.	0.85	0.46	3.5641	0.0923	17.6	12.2	13.8	20.3	15.7	15.9	(0.18)	15.5	(0.09)
Ashland Inc.	0.85	0.70	3.0684	0.0794	9.8	14.9	18.2	5.9	4.5	10.7	(0.55)	9.0	(1.06)
Baldor Electric	0.85	0.74	3.0142	0.0780	16.4	17.7	8.5	8.7	9.5	12.2	(0.44)	15.0	(0.16)
Banta Corp.	0.75	0.58	2.9767	0.0771	16.4	15.8	14.2	13.3	12.2	14.2	(0.28)	14.0	(0.31)
CLARCOR Inc.	0.85	0.71	3.7284	0.0965	16.8	16.6	16.3	14.8	14.7	15.8	(0.17)	13.5	(0.39)
Capitol Fed. Finl	0.70	0.60	2.9386	0.0761	4.1	7.7	7.4	8.1	5.3	6.7	(0.67)	10.0	(0.61)
Catellus Development	0.80	0.63	3.1379	0.0812	11.9	16.2	22.2	16.0	18.4	16.3	(0.12)	20.5	0.66
Cincinnati Financial	0.85	0.73	3.1407	0.0813	4.7	2.0	3.2	5.4	8.2	4.3	(1.05)	7.5	(1.28)
City National Corp.	0.90	0.79	3.3312	0.0862	18.9	17.7	16.4	16.3	15.3	16.9	(0.07)	14.0	(0.31)
ConAgra Foods	0.70	0.52	3.5237	0.0912	23.9	27.0	17.1	18.2	18.2	20.9	0.24	19.0	0.43
ConocoPhillips	0.85	0.75	3.1745	0.0822	10.5	28.4	11.4	6.1	13.4	13.6	(0.31)	8.0	(1.21)
Crescent Real Est.	0.80	0.64	2.9690	0.0769	5.5	8.0	7.0	15.3	15.2	9.8	(0.63)	14.5	(0.24)
Curtiss-Wright	0.70	0.48	3.5467	0.0918	12.3	13.1	11.6	10.1	10.9	11.6	(0.48)	12.5	(0.54)
Dean Foods	0.85	0.40	3.4581	0.0895	20.5	20.1	8.5	17.0	12.6	15.7	(0.16)	10.5	(0.84)
Dentsply Int'l	0.70	0.64	3.3077	0.0856	19.2	19.4	18.0	17.5	19.4	17.9	0.01	13.5	(0.39)
First Midwest Bancorp	0.80	0.78	2.9450	0.0762	19.2	16.9	18.4	18.3	17.8	18.1	0.02	18.5	0.36
Fortune Brands	0.85	0.72	3.6381	0.0942	12.4	17.1	17.8	21.2	20.9	17.9	0.01	16.5	0.06
Golden West Finl	0.85	0.75	3.5952	0.0931	14.8	14.8	19.1	19.1	18.6	17.3	(0.04)	22.5	0.96
HNI Corp.	0.85	0.74	3.6728	0.0951	19.8	18.5	15.2	14.1	13.8	16.3	(0.12)	19.0	0.43
Harte-Hanks	0.80	0.66	3.2423	0.0839	12.6	14.9	14.4	17.0	16.7	14.9	(0.23)	15.0	(0.16)
Healthcare R'lty Trust	0.85	0.43	3.0801	0.0797	8.5	8.0	7.9	9.0	7.7	8.2	(0.75)	11.5	(0.69)
Hersey Foods	0.60	0.37	3.1464	0.0815	26.9	28.1	32.9	31.8	37.1	31.4	1.06	33.5 (4)	2.60
Hillenbrand Inds.	0.80	0.67	3.4433	0.0891	17.7	18.7	17.7	19.8	21.1	19.0	0.09	21.5	0.61
Hormel Foods	0.65	0.41	2.9793	0.0771	19.0	19.5	18.3	17.0	14.8	17.7	(0.01)	17.5	0.21
Hospitality Properties	0.60	0.66	3.1431	0.0814	7.4	8.5	8.2	8.7	7.0	8.0	(0.77)	8.0	(1.21)
IHOP Corp.	0.85	0.76	3.6811	0.0953	14.2	13.6	12.9	11.2	11.1	12.6	(0.41)	12.0	(0.61)
Int'l Flavors & Frag.	0.75	0.59	3.7525	0.0971	22.0	23.7	25.8	32.0	26.9	26.1	0.65	20.5	0.69
Johnson & Johnson	0.65	0.46	3.2776	0.0849	26.0	25.5	24.3	30.0	28.8	26.5	0.68	22.5	0.96
Kellogg	0.55	0.31	3.6306	0.0940	74.5	72.6	61.1	79.4	54.6	68.4 (4)	3.95	28.0	1.76
Kimberly-Clark	0.70	0.49	3.0057	0.0778	31.6	31.2	30.8	30.9	25.4	30.0	0.95	24.0	1.18
Kraft Foods	0.60	0.37	2.9494	0.0943	13.0	14.2	8.0	13.8	12.1	12.2	(0.44)	11.0	(0.76)
Lawson Products	0.85	0.42	3.6513	0.0945	15.9	16.3	8.7	7.7	9.7	11.7	(0.48)	14.0	(0.31)
Marathon Oil Corp.	0.85	0.76	3.5433	0.0917	9.0	27.0	26.7	11.1	16.7	18.1	0.02	14.0	(0.31)
McClatchy Co.	0.75	0.60	3.0524	0.0790	9.4	9.3	8.3	12.5	11.9	9.9	(0.62)	10.5	(0.84)
McGraw-Hill	0.60	0.65	3.1551	0.0817	23.7	26.2	25.9	26.6	24.6	25.4	0.59	25.0	1.33
Media General 'A'	0.90	0.78	3.1339	0.0811	5.3	4.6	1.5	5.0	4.9	4.3	(1.05)	6.5	(1.43)
Meredith Corp.	0.85	0.76	3.0251	0.0783	21.3	21.3	17.8	11.2	18.4	18.0	0.02	17.0	0.13
Minerals Techn.	0.90	0.78	3.6285	0.0939	12.8	12.6	10.2	9.1	7.3	10.4	(0.58)	10.5	(0.84)
New Plan Excel R'lty	0.65	0.46	3.3158	0.0858	9.2	7.9	7.0	7.8	8.1	8.0	(0.77)	12.5	(0.54)
New York Times	0.85	0.77	3.1153	0.0806	21.4	28.1	22.2	24.1	21.5	23.5	0.45	23.0	1.03
Occidental Petroleum	0.85	0.73	3.4225	0.0886	7.3	27.8	23.6	16.2	20.3	19.0	0.09	11.5	(0.69)
People's Bank	0.85	0.72	3.2209	0.0834	14.3	12.3	2.6	5.9	6.4	8.3	(0.74)	10.5	(0.84)
PepsiCo Inc.	0.85	0.44	3.1931	0.0827	26.8	30.1	34.6	37.7	30.0	31.8	1.09	32.0 (4)	2.37
Pfizer Inc.	0.85	0.71	3.3984	0.0880	38.2	40.4	45.6	47.9	19.5	38.3	1.60	24.0	1.18
Plum Creek Timber	0.70	0.64	2.9782	0.0771	17.4	16.8	9.2	10.6	9.7	12.7	(0.40)	16.0	(0.01)
Popular Inc.	0.60	0.64	3.1070	0.0804	14.2	13.6	13.4	14.6	17.1	14.6	(0.25)	15.5	(0.09)
Pulitzer Inc.	0.75	0.59	2.9221	0.0756	2.6	4.4	1.3	4.3	5.9	3.7	(1.10)	6.5	(1.43)
RLI Corp.	0.75	0.65	3.1468	0.0815	10.7	8.8	9.0	8.4	10.6	9.5	(0.65)	11.0	(0.76)
Ralcorp Holdings	0.55	0.28	3.4046	0.0881	11.2	10.8	9.9	12.3	13.0	11.4	(0.50)	11.5	(0.69)
SLM Corporation	0.60	0.66	3.5721	0.0926	47.9	34.8	37.3	31.9	33.3	37.0	1.50	25.5	1.40

Aqua Illinois, Inc. - Oak Run Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-One Non-Utility Companies Comparable to
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)

Proxy Group of Seventy-One Non-Utility Companies Comparable to the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-year Average (2) Percent	5-year Average (2) Student's T-Test	6-Year Projected (3) Percent	6-Year Projected (3) Student's T-Test
Sara Lee Corp.	0.60	0.36	3.4174	0.0885	88.3	92.0	99.9	63.8	59.1	80.6 (4)	4.91	32.0 (4)	2.37
Selective Ins. Group	0.80	0.64	3.6719	0.0951	9.4	4.8	4.5	6.1	7.7	6.5	(0.88)	13.0	(0.46)
Sensient Techn.	0.70	0.54	3.6751	0.0951	18.6	16.7	15.1	16.2	13.4	16.0	(0.14)	13.0	(0.46)
Sysco Corp.	0.80	0.65	3.5151	0.0910	26.4	26.8	27.8	31.9	35.4	29.3	0.90	28.5	1.85
Tennant Co.	0.75	0.60	3.6365	0.0942	17.7	18.2	3.1	8.0	8.5	11.1	(0.52)	12.0	(0.81)
Thomburg Mtg.	0.70	0.54	3.5856	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.50)	14.0	(0.31)
Tootsie Roll Ind.	0.65	0.43	2.9875	0.0768	16.8	16.5	12.9	12.6	12.1	14.1	(0.29)	11.0	(0.76)
Toro Co.	0.80	0.69	3.2798	0.0849	12.5	14.3	14.8	17.4	18.5	15.5	(0.18)	27.0	1.63
Union Pacific	0.90	0.78	3.2485	0.0841	8.2	9.0	8.7	9.3	8.5	8.7	(0.71)	9.0	(1.06)
Universal Corp.	0.70	0.49	3.7088	0.0960	23.8	23.7	21.4	18.1	18.3	21.0	0.25	17.0	0.13
Unocal Corp.	0.90	0.78	3.4344	0.0889	6.2	26.8	19.2	10.0	16.0	15.4	(0.19)	14.5	(0.24)
Walgreen Co.	0.85	0.72	3.7290	0.0965	17.9	17.9	18.7	16.3	16.1	17.0	(0.09)	17.0	0.13
Washington Federal	0.85	0.72	3.7290	0.0965	15.2	13.9	13.0	15.0	13.8	14.2	(0.28)	14.0	(0.31)
Webster Fin'l	0.90	0.79	3.0862	0.0799	15.9	12.9	13.6	15.5	14.2	14.4	(0.27)	12.0	(0.61)
Wels Markets	0.70	0.52	3.2491	0.0841	8.5	7.9	10.1	10.4	9.5	9.3	(0.69)	10.5	(0.84)
West Pharmac. Svcs.	0.70	0.49	3.6054	0.0933	15.7	8.3	11.8	6.4	10.6	10.6	(0.56)	12.0	(0.61)
Average for the Non-Utility Group	0.77	0.61	3.3197	0.0862									
Average for the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	0.72	0.53	3.2953 (12)	0.0861									
Mean										15.6%		15.1%	
Conclusion (5)											15.4% (6)		
Conservative Mean (7)										14.1%		13.5%	
Conservative Conclusion (8)											13.8% (6)		

See pages 5 and 6 for notes.

Aqua Illinois, Inc. – Oak Run Divison
Comparable Earnings Analysis

Notes: (1) The criteria for selection of the proxy group of seventy-nine non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of seventy-nine non-utility companies was selected based upon the proxy group of six C. A. Turner water companies' unadjusted beta range of 0.15 - 0.75 and standard error of the regression range of 3.2822 – 4.2788. These ranges are based upon plus or minus three standard deviations of the unadjusted beta and standard error of the regression as detailed in Ms. Ahern's accompanying direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(2) Ending 2003.

(3) 2007-2009.

(4) The Student's T-statistic associated with these returns exceeds 1.96 at the 95% level of confidence. Therefore, they have been excluded, as outliers, to arrive at proper mean historical and projected returns as fully explained in Ms. Ahern's accompanying testimony.

(5) The standard deviation of the proxy group of six C. A. Turner water companies' standard error of the regression is 0.1661. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{/2N}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1661 = \frac{3.7805}{/518} = \frac{3.7805}{22.7596}$$

(6) Mid-point of the arithmetic mean of the historical five year average and five year projected rate of return on net worth.

(7) Arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those below 8.6%, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Aqua Schedule 3.14.)

(8) Mid-point of the arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those below 8.8%, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Aqua Schedule 3.14.)

(9) The criteria for selection of the proxy group of ninety-seven non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of ninety-seven non-utility companies was selected based upon the proxy group of three Value Line (Standard Edition) water companies' unadjusted beta range of 0.26 - 0.82 and standard error of the

Aqua Illinois, Inc. – Oak Run Divison
Comparable Earnings Analysis

regression range of 3.1532– 4.1108. These ranges are based upon plus or minus three standard deviations of the unadjusted beta and standard error of the regression as detailed in Ms. Ahern's accompanying direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(10) The standard deviation of the proxy group of three Value Line (Standard Edition) water companies' standard error of the regression is 0.1596 (3.6320 / 22.7596).

(11) The criteria for selection of the proxy group of seventy-one non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of seventy-one non-utility companies was selected based upon the proxy group of fifteen utilities selected on the basis of least relative distance's unadjusted beta range of 0.27 - 0.79 and standard error of the regression range of 2.8609– 3.7297. These ranges are based upon plus or minus three standard deviations of the unadjusted beta and standard error of the regression as detailed in Ms. Ahern's accompanying direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(12) The standard deviation of the proxy group of fifteen utilities selected on the basis of least relative distance's standard error of the regression is 0.1448 (3.2953 / 22.7596).

Source of Information: Value Line, Inc., September 16, 2004
Value Line Investment Survey (Standard Edition)

AQUA ILLINOIS, INC.

OAK RUN DIVISION

2004 RATE CASE

EXHIBIT 3

AQUA SEWER EXHIBIT NO. 3.0

AQUA ILLINOIS, INC. – WOODHAVEN LAKES SEWER DIVISION

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS - UTILITY SERVICES

CONCERNING

COMMON EQUITY COST RATE

DECEMBER 2004

TABLE OF CONTENTS

Appendix A to the Direct Testimony of Pauline M. Ahern

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. Please summarize your educational background and professional experience.

A. I am a graduate of Clark University, Worcester, MA, where I received a Bachelor of Arts degree with honors in Economics in 1973. In 1991, I received a Master of Business Administration with high honors from Rutgers University.

In June 1988, I joined AUS Consultants - Utility Services as a Financial Analyst and am now a Vice President. I am responsible for the preparation of all fair rate of return and capital structure exhibits for AUS Consultants - Utility Services. I have offered expert testimony on behalf of investor-owned utilities before twenty state regulatory commissions. The details of these appearances, as well as details of my educational background, are shown in Appendix A supplementing this testimony.

I am also the Publisher of C. A. Turner Utility Reports, responsible for the production, publication, distribution and marketing of these reports. C. A. Turner Utility Reports provides financial data and related ratios covering approximately 150 public utility companies on a monthly, quarterly, and annual basis. Coverage includes electric, combination gas and electric, gas distribution, gas transmission, telephone, water and international utilities. The Reports are distributed to about 100 subscribers, which include utilities, state utility commissions, federal agencies, individuals, brokerage firms, attorneys and public

and collegiate libraries.

I also calculate and maintain the A.G.A. Index under contract with the American Gas Association (A.G.A.). The A.G.A. Index is a market capitalization weighted index of the common stocks of about 70 corporate members of the A.G.A.

I have co-authored an article with Frank J. Hanley, President, AUS Consultants - Utility Services entitled "Comparable Earnings: New Life for an Old Precept" which was published in the American Gas Association's Financial Quarterly Review, Summer 1994. I also assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

I am a member of the Society of Utility and Regulatory Financial Analysts, formerly the National Society of Rate of Return Analysts serving as Secretary/Treasurer for 2004-2006. In 1992, I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts. This designation is based upon education, experience and the successful completion of a comprehensive written examination.

I am an associate member of the National Association of Water Companies, serving on its Finance Committee, and a member of the Energy Association of Pennsylvania, formerly the Pennsylvania Gas Association.

Q. What is the purpose of your testimony?

A. The purpose is to provide testimony on behalf of Aqua IL - Woodhaven Lakes Sewer Division (Aqua IL - Woodhaven or the Company) as to the appropriate common equity cost rate which it should be afforded the opportunity to earn on

the common equity financed portion of its jurisdictional rate base.

Q. What is your recommended common equity cost rate?

A. Although the Company is basing its filing upon a requested common equity cost rate of 10.75%, current capital market conditions indicate that a common equity cost rate of 11.30% is applicable to a 51.39% average common equity ratio estimated for the test year ending December 31, 2005. The capital structure and the embedded cost rates of long- and short-term debt as well as preferred stock are supported by Company Witness Jack Schreyer.

Q. Have you prepared an exhibit which supports your overall recommended fair rate of return?

A. Yes, I have. It has been marked for identification as Aqua Sewer Exhibit No. 3.0 and consists of Aqua Schedules 3.1 through 3.16. Hereinafter, references to Schedules within this testimony will be from this Exhibit, unless otherwise noted.

II. SUMMARY

Q. Please summarize your recommended common equity cost rate.

A. The basis of the 11.30% common equity cost rate recommendation is summarized on Aqua Schedule 3.1, page 2 and results in an overall cost of capital of 9.283% when applied to Aqua IL - Woodhaven's average capital structure and related ratios and fixed capital cost rates estimated at December 31, 2005 which is summarized on Aqua Schedule 3.1, page 1.

The overall cost of capital is summarized in Table 1 below:

Table 1

	Capital Structure Ratios	Cost Rate	Weighted Return
Long-Term Debt	47.90%	7.19%	3.446%
Short-Term Debt	0.38	3.07	0.012
Total Debt	48.28		3.458
Preferred Stock	0.32	5.48	0.018
Common Equity	51.39	11.30	5.807
Total	99.99%(1)		9.283%

(1) Does not add due to rounding.

Because Aqua IL - Woodhaven's common stock is not publicly traded, market-based common equity cost rates cannot be determined directly for Aqua IL - Woodhaven. Therefore, in arriving at my recommended common equity cost rate of 11.30%, I assessed the market-based cost rates of companies of relatively similar risk, i.e., proxy group(s), for insight into a recommended common equity cost rate applicable to Aqua IL - Woodhaven and suitable for cost of capital purposes. It is appropriate to look to a proxy group or groups of companies as similar in risk as possible whose common stocks are actively traded for insight into an appropriate common equity cost rate applicable to Aqua IL - Woodhaven and then adjust the results upward to reflect Aqua IL - Woodhaven's greater investment risk (vis-à-vis the proxy group(s)). Using other utilities of relatively comparable risk as proxies is consistent with the principles of fair rate of return established in the Hope[1] and Bluefield[2] cases and adds reliability to the informed expert judgment used in arriving at a recommended

[1] Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).

[2] Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679 (1922).

common equity cost rate. However, no proxy group can be selected to be identical in risk to Aqua IL - Woodhaven and therefore, the proxy group(s)' results must be adjusted to reflect the greater relative investment risk of Aqua IL - Woodhaven as will be subsequently discussed in detail. Therefore, I have evaluated the market data of two proxy groups of water companies and a group of utility companies in arriving at my recommended common equity cost rate. The bases of selection are described below.

As explained in more detail below, my analysis reflects current capital market conditions and results from the application of four well-tested market-based cost of common equity models, the Discounted Cash Flow (DCF) approach, the Risk Premium Model (RPM), the Capital Asset Pricing Model (CAPM), and the Comparable Earnings Model (CEM).

The results derived from each are as follows:

Table 2

	Proxy Group of Six C.A. Turner Water Cos.	Proxy Group of Three Value Line (Std. Ed.) Water Cos.	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Discounted Cash Flow Model	10.6%	11.0%	10.8%
Risk Premium Model	10.6	10.8	10.9
Capital Asset Pricing Model	10.0	10.3	10.3
Comparable Earnings Model	14.2	14.0	13.8
Indicated Common Equity Cost Rate Before Investment Risk Adjustment	10.80%	11.00%	11.00%
Investment Risk Adjustment	0.30	0.30	0.50
Common Equity Cost Rate After Adjustment for Investment Risk	11.10%	11.10%	11.50%
Recommended Common Equity Cost Rate		11.30%	

After reviewing the cost rates based upon the four models, I conclude that a common equity cost rate before an investment risk adjustment of 10.80% is indicated based upon the application of all four models to the proxy group of six

C.A. Turner water companies, 11.00% for the proxy group of three Value Line (Standard Edition) water companies, and 11.00% for the proxy group of fifteen utilities selected on the basis of least relative distance. After applying investment risk adjustments due to Aqua IL - Woodhaven's small size and greater credit risk[3] vis-a-vis the two proxy groups as will be discussed in detail subsequently, the indicated common equity cost rate for each proxy group is 11.10%, 11.30%, and 11.50%, respectively. Based upon these cost rates, I recommend a common equity cost rate of 11.30% applicable to the Company's proposed common equity ratio of 51.39%.

III. GENERAL PRINCIPLES

Q. What general principles have you considered in arriving at your recommended common equity cost rate of 11.30%.

A. In unregulated industries, marketplace competition is the principal determinant of the price of a product or service. In the case of regulated public utilities, regulation must act as a substitute for marketplace competition. Consequently, marketplace data must be relied upon to assure that the utility can fulfill its obligations to the public and provide adequate service at all times. This requires a level of earnings sufficient to maintain the integrity of presently invested capital and permit the attraction of needed new capital at a reasonable cost in competition with other comparable-risk firms. These standards for a fair rate of return have been established by the U.S. Supreme Court in the Hope and Bluefield cases cited previously. Consequently, in my determination of a fair rate of return, I have also evaluated data gathered from the marketplace for utilities as similar in risk as possible to Aqua IL - Woodhaven.

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3 Due to Aqua IL NAIC2 rating, which is equivalent to a Moody's Baa bond rating and to a Standard & Poor's (S&P) bond rating of BBB.

IV. BUSINESS RISK

Q. Please define business risk and explain why it is important to the determination of a fair rate of return?

A. Business risk incorporates all of the risks of a firm other than financial risk, which will be discussed subsequently. Examples of business risk include the quality of management and the regulatory environment which have a direct bearing on earnings.

Business risk is important to the determination of a fair rate of return because the greater the level or risk, the greater the rate of return investors demand, consistent with the basic financial precept of risk and return.

Q. Please discuss the business risks facing the water industry in general.

A. The water utility industry faces significant risks related to replacing aging transmission and distribution systems. Value Line Investment Survey[4] observes:

> Infrastructure costs continue to climb higher as water utility companies, with little help from strapped government branches, are forced to deal with maintaining and upgrading existing facilities. Costs are becoming an even greater concern as time passes because a number of the functioning systems currently in place are over 100 years old and in need of significant repair. That said, we believe that it will take hundreds of billions of dollars to renovate existing pipelines over the next few decades. To make matters worse, the costs of staying in compliance with regulatory laws are growing even more difficult, due to fears of terrorist activities against the country's drinking supplies. Although the Safe Drinking Water Act (SDWA) of 1974 remains the authority for the safety and

[4] Value Line Investment Survey, October 29, 2004.

> purity of drinking water, recent amendments are making compliance even more demanding. In 1996, an amendment authorized the Environmental Protection Agency (EPA) to step up local compliance levels. And, governing law-makers now insist that the EPA work with local and state governments to test for impurities in drinking water and to regulate the levels of contaminants that are acceptable.

In addition, because the water industry is much more capital-intensive than the electric, natural gas or telephone industries, the investment required to produce a dollar of revenue is greater. And, because investor-owned water utilities typically do not receive federal funds for infrastructure replacement, the challenge to investor-owned water utilities is exacerbated and their access to financing is restricted, thus increasing risk.

The water utility industry also experiences lower relative depreciation rates. Lower depreciation rates, as one of the principal sources of internal cash flows for all utilities, mean that water utility depreciation as a source of internally-generated cash is far less than for electric, natural gas or telephone utilities. Water utilities' assets have longer lives and, hence, longer capital recovery periods. As such, water utilities face greater risk due to inflation which results in a higher replacement cost per dollar of net plant than for other types of utilities.

In addition, as noted by S&P[5]:

> Environmental regulations, which can be particularly stringent for water utilities, impact credit quality. Mandatory compliance with environmental legislation is often quite capital intensive. This is particularly so in the areas of wastewater discharge and drinking water quality. In most jurisdictions observed by Standard & Poor's, pressures from environmental standards is likely to increase. High compliance costs can impact a water utility's creditworthiness if their financing is up-front and their recovery is over a long period, potentially putting stress on the financial profile in the short term.
>
> A key rating consideration is the extent of the link between a water

[5] Standard & Poor's, Criteria: Infrastructure Finance, Water and Wastewater Utilities, Projects and Concessions, September 1998, p. 47.

utility's legislated environmental standards and its rate-setting mechanism. Stringent environmental rules requiring expensive upgrade and compliance costs are not necessarily a negative rating factor, so long as the utility has a flexible and transparent process for passing the costs through to consumers, and these consumers are willing and able to bear these costs. Standard & Poor's considers whether the environmental and economic regulators are acting in isolation, or perhaps have different constituencies.

Moody's[6] also notes that:

> We expect that the credit quality of the investor-owned U.S. water utilities will likely deteriorate over the next several years, due to ongoing large capital spending requirements in the industry. Larger capital expenditures facing the water utility industry result from the following factors:
>
> - Continued federal and state environmental compliance requirements;
> - Higher capital investments for constructing modern water treatment and filtration facilities;
> - Ongoing improvement of maturing distribution and delivery infrastructure; and
> - Heightened security measures for emergency preparedness designed to prevent potential terrorist acts.
>
> Given the overwhelming importance of protecting the public health, the water utility industry remains regulated by the federal and state regulatory agencies. As a result of this importance, the level of state regulators' responsiveness is critical in enabling the water utilities to maintain their financial integrity. In addition, when utilities are permitted a fair rate of return and timely rate adjustments to reflect the costs of providing this essential service, they will be more able to implement the necessary safeguards to protect the public health.

In addition, the water utility industry, as well as the electric and natural gas utility industries, faces the need for increased funds to finance the increasing security costs required to protect the water supply and infrastructure from potential terrorist attacks in the post-September 11, 2001 world.

[6] Moody's Investors Service, Global Credit Research, "Credit Risks and Increasing for U.S. Investor Owned Water Utilities", Special Comment, January 2004, p. 5.

In view of the foregoing, it is clear that their high degree of capital intensity coupled with the need for substantial infrastructure capital spending and increased anti-terrorism security spending, require regulatory support in the form of adequate and timely rate relief so water utilities will be able to successfully meet the challenges they face.

Q. Does Aqua IL - Woodhaven face additional extraordinary business risk?

A. Yes. Aqua IL - Woodhaven's smaller size, i.e., total capital of $112.954 million at December 31, 2003 (see page 3 of Aqua Schedule 3.1) vis-à-vis average total capital of $502.690 million in 2003 for the proxy group of six C.A. Turner water companies (see page 3 of Aqua Schedule 3.1), $865.130 million for the proxy group of three Value Line (Std. Ed.) water companies, and $6.719 billion for the proxy group of fifteen utilities selected on the basis of least relative distance (see page 3 of Aqua Schedule 3.1) indicates greater relative business risk because all else equal, size has a bearing on risk.

Q. Please explain why size has a bearing on business risk.

A. Smaller companies are less capable of coping with significant events which affect sales, revenues and earnings.

The loss of revenues from a few larger customers, for example, would have a greater effect on a small company than on a much larger company with a larger customer base. Because Aqua IL - Woodhaven is the regulated utility to whose rate base the Illinois Commerce Commission's (ICC or the Commission)

ultimately allowed overall cost of capital and fair rate of return will be applied, the relevant risk reflected in the cost of capital must be that of Aqua IL - Woodhaven, including the impact of its small size on common equity cost rate. Size is an important factor which affects common equity cost rate, and Aqua IL - Woodhaven is significantly smaller than the average company in the proxy group based upon total investor-provided capital as shown below:

Table 3

	2003 Total Capital ($ millions)	Times Greater than The Company	Market Capitalization(1) ($ Millions)	Times Greater than the Company
Proxy Group of Six C.A. Turner Water Companies	$502.690	4.5x	$605.425	4.4x
Proxy Group of Three Value Line (Std. Ed.) Water Companies	865.130	7.7x	1,054.633	8.0x
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	6,719.260	59.5x	5,517.271	49.9x
Aqua IL - Woodhaven	112.954		136.749 (2) 132.125 (3) 110.465 (4)	

(1) From Aqua Schedule 3.1, page 3.
(2) Based upon the average market-to-book ratio of the proxy group of six C.A. Turner water companies.
(3) Based upon the average market-to-book ratio of the proxy group of three Value Line (Std. Ed.) water companies.
(4) Based upon the average market-to-book ratio of the proxy group of fifteen utilities selected on the basis of least relative distance.

I have also done a study of the market capitalization of the proxy groups of six C.A. Turner water companies, three Value Line (Std. Ed.) water companies, and fifteen utilities. The results are shown on page 5 of Aqua Schedule 3.1 which summarizes the market capitalizations as of December 7, 2004.

Aqua IL - Woodhaven's common stock is not publicly traded. Consequently, I have assumed that if it were publicly traded, its consolidated common shares would be selling at the same market-to-book ratio as the

average market-to-book ratio for the proxy group, or 233.6% (six water companies), 225.7% (three water companies), and 188.7% (fifteen utilities) at December 7, 2004. Hence, Aqua IL - Woodhaven's market capitalization is estimated at $136.749 million, $132.125, and $110.465 based upon the average market-to-book ratios of each proxy group, respectively, as of December 7, 2004. In contrast, the market capitalization of the average C.A. Turner water company was $605.425 million on December 7, 2004, or 4.4 times larger than Aqua IL - Woodhaven's estimated market capitalization. In addition, the market capitalization of the average Value Line (Std. Ed.) water company was $1.055 billion and of the average utility company selected on the basis of least relative distance, $5.517 billion at December 7, 2004, or 8.0 and 49.9 times larger than Aqua IL – Woodhaven, respectively. It is conventional wisdom, supported by actual returns over time, and a general premise contained in basic finance textbooks, that smaller companies tend to be more risky causing investors to expect greater returns as compensation for that risk.

Q. Does the financial literature affirm a relationship between size and common equity cost rate?

A. Yes. Brigham[7] states"

> A number of researchers have observed that portfolios of small-firms have earned consistently higher average returns than those of large-firms stocks; this is called "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; what *the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms.* (italics added)

[7] Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition, The Dryden Press, 1989, p. 623.

V. FINANCIAL RISK

Q. Please define financial risk and explain why it is important to the determination of a fair rate of return?

A. Financial risk is the additional risk created by the introduction of senior capital, i.e., debt and preferred stock, into the capital structure. In other words, the higher the proportion of senior capital in the capital structure, the higher the financial risk.

Utilities formerly were considered to have much less business risk vis-a-vis unregulated enterprises, and, as a result, a larger percentage of debt capital was acceptable to investors. In June 2004, S&P revised its utility financial guidelines and assigned new business profile scores to U.S. utility and power companies to better reflect the relative business risk among companies in the sector. S&P's revised financial guidelines to the bond rating process for utilities can be found in Aqua Schedule 3.2, page 14, while pages 1 through 9 describe the utility bond rating process. As shown on page 14, S&P's revised financial guidelines for utilities establishes financial target ratios for ten levels of business position/profile with "1" being considered lowest risk and "10" being highest risk.

As shown on Aqua Schedule 3.14, page 2, the average S&P bond rating (issue credit rating) and business profile of the six C.A. Turner water companies is A+ and "2.6", which rounds to "3", A+/A and "2.7" (rounded to "3"), for the three Value Line (Std. Ed.) water companies, and A and "3.5" for the fifteen utilities selected on the basis of least relative distance.

Q. How can one measure the combined business and financial risks, i.e., investment risk of an enterprise?

A. Similar bond ratings/issue credit ratings reflect similar combined business and financial risks, i.e., total risk. Although the specific business or financial risks may differ between companies, the same bond rating indicates that the combined risks are similar as the bond rating process reflects acknowledgment of all diversifiable business and financial risks. For example, S&P expressly states that the bond rating process encompasses a qualitative analysis of business and financial risks (see pages 3 through 9 of Aqua Schedule 3.2). There is no perfect single proxy, such as bond rating or common stock ranking, by which one can differentiate common equity risk between companies. However, the bond rating provides a useful means to compare/differentiate common equity risk between companies because it is the result of a thorough and comprehensive analysis of all diversifiable business and financial risks, i.e., investment risk.

Aqua IL - Woodhaven's debt has been assigned the bond / issue credit rating equivalent of an NAIC (National Association of Insurance Commissioners) Rating of 2 by NatCity Investments, Inc., the investment banker which privately places Aqua IL - Woodhaven's debt with insurance companies. According to the NAIC[8]:

> **NAIC 2** is assigned to obligations of high quality. Credit risk is low but may increase in the intermediate future and the issuer's credit profile is reasonably stable. This means that for the present, the obligation's protective elements suggest a high likelihood that interest, principal or both will be paid in accordance with the contractual agreement, but there are suggestions that an adverse change in circumstances or economic, financial or business conditions will affect the degree of protection and lead to a weakened capacity to pay. An NAIC 2

[8] National Association of Insurance Commissioners, Purposes and Procedures Manual of the NAIC Securities Valuation Office, December 31, 2003 Update, Part Three: Definitions of NAIC Designation Categories, Valuation Indicators and Administrative Symbols, p. 1.

obligation should be eligible for relatively favorable treatment under the NAIC Financial Conditions Framework.

The NAIC also compares its ratings to those of "Nationally Recognized Statistical Rating Organizations", such as Moody's and S&P. Thus, according to the NAIC, an NAIC 2 rating is equivalent to Moody's Baa1, Baa2, and Baa3 and S&P's BBB+, BBB, and BBB- bond ratings.[9] Hence, Aqua IL - Woodhaven's credit risk is greater than that of either proxy group whose average Moody's and S&P bond / issue credit ratings are A2 and A+, for the six water companies, A2 and A+/A, for the three water companies, respectively, and A3 and A, for the fifteen utilities, respectively.

VI. AQUA IL – WOODHAVEN LAKES SEWER DIVISION

Q. Have you reviewed financial data for Aqua IL - Woodhaven?

A. Yes. Aqua IL - Woodhaven provides sewer service to approximately 5,400 retail customers in the Woodhaven Lakes Development. Aqua IL - Woodhaven is a subsidiary of Consumers Water Company. Thus, the Company's common stock is not publicly traded.

VII. PROXY GROUPS

Q. Please explain how you chose the proxy group of six C.A. Turner water companies.

A. The basis of selection for the proxy group of six C.A. Turner water companies were those companies that meet the following criteria: 1) they are included in the

[9] Id., Appendix A, Section 4, "List of Nationally Recognized Statistical Rating Organizations and the Rating Equivalent of Their Systems to NAIC Designations", pp. A-13 and A-14.

Water Company Group of C.A. Turner Public Utility Reports (December 2004); 2) they have Value Line or Thomson FN/First Call Consensus; and 3) they have more than 70% of their 2003 operating revenues derived from water operations. Six companies met all of these criteria.

Q. Please describe Aqua Schedule 3.4.

A. Aqua Schedule 3.4 contains comparative capitalization and financial statistics for the six C.A. Turner water companies for the years 1999 through 2003. The schedule consists of three pages. Page 1 contains a summary of the comparative data for the years 1999-2003. Page 2 contains notes relevant to page 1, as well as the basis of selection and names of the individual companies in the proxy group. Page 3 contains the capital structure ratios based upon total capital (including short-term debt) by company and on average for the years 1999-2003.

During the five-year period ending 2003, the achieved average earnings rate on book common equity for this group ranged between 8.97% in 2003, and 10.82% in 1999, and averaged 10.16%. The five-year average market/book ratio ending 2003 was 212.98%. The five-year ending 2003 average common equity ratio based upon total investor-provided capital was 43.09%, while the five-year average dividend payout ratio was 80.17%.

Coverage of interest charges, excluding all AFUDC from funds from operations for the years 1999-2003 ranged between 3.10 and 3.38 times and averaged 3.26 times during the five-year period, while funds from operations relative to total debt ranged from 13.57% in 2003 to 15.57% in 1999 and averaged 14.36% for the five-year period.

Q. Please explain how you chose the proxy group of three Value Line water

companies.

A. The basis of selection for the proxy group of three Value Line (Standard Edison) water companies was to include those companies which are part of Value Line's (Standard Edition) Water Utility Industry Group.

Q. Please describe Aqua Schedule 3.5.

A. Schedule 3.5 contains comparative capitalization and financial statistics for the three Value Line (Standard Edition) water companies for the years 1999 through 2003. The schedule consists of three pages. Page 1 contains a summary of the comparative data for the years 1999-2003. Page 2 contains notes relevant to page 1, as well as the basis of selection and names of the individual companies in the proxy group. Page 3 contains the capital structure ratios based upon total capital (including short-term debt) by company and on average for the years 1999-2003.

During the five-year period ending 2003, the achieved average earnings rate on book common equity for this group ranged between 8.86% in 2003, and 11.28% in 1999, and averaged 10.60%. The five-year average market/book ratio ending 2003 was 219.34%. The five-year ending 2003 average common equity ratio based upon total investor-provided capital was 43.01%, while the five-year average dividend payout ratio was 75.16%.

Coverage of interest charges, excluding all AFUDC from funds from operations for the years 1999-2003 ranged between 3.40 and 3.63 times and averaged 3.54 times during the five-year period, while funds from operations relative to total debt ranged from 14.60% to 18.17% and averaged 15.89% during the five-year period.

Q. Please explain how you chose the proxy group of fifteen utilities selected on the basis of least relative distance.

A. Investment risk is the sum of business and financial risks. I chose to examine eight operating / financial ratios that I believe provide comprehensive insight into the business and financial risks of utilities, including water companies. I based my analyses upon the average results for the years 2001, 2002, and 2003. As the benchmark I utilized, for Aqua IL - Woodhaven, the three-year average for each of eight ratios which are described as follows: 1) pretax interest coverage; 2) common equity ratio; 3) fixed asset turnover; 4) the percentage of allowance for funds used during construction (AFUDC) to net income; 5) cash flow as a percentage of permanent capitalization; 6) the ratio of net cash flow to expenditures; 7) interest coverage based on funds flow; and 8) operating earnings stability.

I employed the Company's ratios as described above in order to select companies comparable in risk to Aqua IL - Woodhaven. I began with all electric, gas, combination electric and gas and water utilities for which data are available for the entire time period in the Standard & Poor's Compustat Services, Inc., PC Plus/Research Insight Database. I calculated the three-year average ratios for 99 electric, gas, combination electric and gas and water utilities and rank-ordered them in terms of the least relative distance to Aqua IL - Woodhaven. The sum of distance was obtained by calculating the squared distances between the eight operating / financial ratios of each firm and those of the Company, summing those squared distances, and then by calculating the square root of the summation. Fifteen utilities were selected as having the lowest sum of distance from Aqua IL - Woodhaven. Consequently, these companies, based upon the eight operating / financial ratios, are the closest in risk to Aqua IL - Woodhaven. Their financial profile is summarized in Aqua Schedule 3.6.

Q. Please describe Aqua Schedule 3.6.

A. Aqua Schedule 3.6 contains comparative capitalization and financial statistics for the fifteen utilities selected on the basis of least relative distance for the years 1999 through 2003. The schedule consists of six pages. Page 1 contains a summary of the comparative data for the years 1999-2003. Page 2 contains notes relevant to page 1, as well as the basis of selection of the individual companies in the proxy group. Pages 3 and 4 contain the capital structure ratios based upon total capital (including short-term debt) by company and on average for the proxy group for the years 1999-2003. Page 5 contains the eight ratios for Aqua IL - Woodhaven and the fifteen utilities which have the lowest sum of distance and thus are closest in risk to Aqua IL - Woodhaven. Page 6 contains notes relevant to page 5.

During the five-year period ending 2003, the achieved average earnings rate on book common equity for this group ranged between 10.02% in 2003 and 11.75% in 1999, and averaged 11.08%. The five-year average market / book ratio ending 2003 was 179.08%. The five-year average ending 2003 common equity ratio based on total investor-provided capital was 42.11%, while the five-year average dividend payout ratio was 71.45%.

Coverage of interest charges, excluding all AFUDC from funds from operations for the years 1999-2003 ranged between 3.69 and 4.29 times and averaged 3.99 times during the five-year period, while funds from operations relative to total debt ranged from 16.03% to 20.85% and averaged 18.65% during the five-year period.

VIII. COMMON EQUITY COST RATE MODELS

A. The Efficient Market Hypothesis (EMH)

Q. Are the cost of common equity models you use market-based models, and hence based upon the EMH?

A. Yes. The DCF model is market-based in that market prices are utilized in developing the dividend yield component of the model. The RPM is market-based in that the bond ratings and expected bond yields used in the application of the RPM reflect the market's assessment of risk. In addition, the use of betas to determine the equity risk premium also reflects the market's assessment of risk as betas are derived from regression analyses of market prices. The CAPM is market-based for many of the same reasons that the RPM is market-based i.e., the use of expected bond (Treasury bond) yields and betas. The CEM is market-based in that the process of selecting the comparable risk non-utility companies is based upon statistics which result from regression analyses of market prices. Therefore, all the cost of common equity models I utilize are market-based models, and hence based upon the EMH.

Q. Please describe the conceptual basis of the EMH.

A. The Efficient Market Hypothesis (EMH), which is the foundation of modern investment theory, was pioneered by Eugene F. Fama[10] in 1970. An efficient market is one in which security prices reflect all relevant information all the time. This implies that prices adjust instantaneously to new information, thus reflecting the intrinsic fundamental economic value of a security.[11]

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[10] Fama, Eugene F., "Efficient Capital Markets: A Review of Theory and Empirical Work". Journal of Finance, May 1970, pp. 383-417.

[11] Morin, Roger A., Regulatory Finance - Utilities' Cost of Capital. Public Utility Reports, Inc., Arlington, VA, 1994, p. 136.

The essential components of the EMH are:

A. Investors are rational and invest in assets providing the highest expected return given a particular level of risk.

B. Current market prices reflect all publicly available information.

C. Returns are independent i.e., today's market returns are unrelated to yesterday's returns.

D. Capital markets follow a random walk i.e., the probability distribution of expected returns approximates a normal distribution.

Brealey and Myers state:[12]

> When economists say that the security market is 'efficient', they are not talking about whether the filing is up to date or whether desktops are tidy. They mean that information is widely and cheaply available to investors and that all relevant and ascertainable information is already reflected in security prices.

The three forms of the EMH are:

A. The "weak" form which asserts that all past market prices and data are fully reflected in securities prices i.e., technical analysis cannot enable an investor to "outperform the market".

B. The "semistrong" form which asserts that all publicly available information is fully reflected in securities prices i.e., fundamental analysis cannot enable an investor to "outperform the market".

C. The "strong" form which asserts that all information, both public and private, is fully reflected in securities prices i.e., even insider information cannot enable an investor to "outperform the market".

The "semistrong" form of the EMH is generally held to be true because the use of insider information often enables investors to "outperform the market" and

[12] Brealey, R.A. and Myers, S.C., Principles of Corporate Finance, McGraw-Hill Publications, Inc., 1996, pp. 323-324.

earn excessive returns. The generally-accepted "semistrong" form of the EMH means that all perceived risks are taken into account by investors in the prices the pay for securities. Investors are aware of all publicly-available information, including bond ratings, discussions about companies by bond rating agencies and investment analysts as well as the various cost of common equity methodologies (models) discussed in the financial literature. In an attempt to emulate investor behavior, this means that no single common equity cost rate model should be relied upon in determining a cost rate of common equity and that the results of multiple cost of common equity models should be taken into account.

Q. Is there support in the academic literature for the need to rely upon more than one cost of common equity model in arriving at a recommended common equity cost rate?

A. Yes. For example, Phillips[13] states:

> Since regulation establishes a level of authorized earnings which, in turn, implicitly influences dividends per share, *estimation of the growth rate from such data is an inherently circular process. For these reasons, the DCF model "suggests a degree of precision which is in fact not present" and leaves "wide room for controversy and argument about the level of k".* (italics added) (p. 396)
>
> * * *
>
> Despite the difficulty of measuring relative risk, the comparable earnings standard is no harder to apply than is the market-determined standard. The DCF method, to illustrate, requires a subjective determination of the growth rate the market is contemplating. Moreover, as Leventhal has argued: *'Unless the utility is permitted to earn a return comparable to that available elsewhere on similar risk, it will not be able in the long run to attract capital.'* (italics added) (p.

[13] Charles F. Phillips, Jr., The Regulation of Public Utilities-Theory and Practice, 1993, Public Utility Reports, Inc., Arlington, VA, p. 396, 398.

398)

Also, Morin[14] states:

> Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods. The DCF model is one of many tools to be employed in conjunction with other methods to estimate the cost of equity. *It is not a superior methodology that supplants other financial theory and market evidence. The broad usage of the DCF methodology in regulatory proceedings does not make it superior to other methods.* (italics added) (Morin, pp. 231-232)

> Each methodology requires the exercise of considerable judgment on the reasonableness of the assumptions underlying the methodology and on the reasonableness of the proxies used to validate a theory. *The failure of the traditional infinite growth DCF model to account for changes in relative market valuation, discussed above, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. It follows that more than one methodology should be employed in arriving at a judgment on the cost of equity and that these methodologies should be applied across a series of comparable risk companies. ...Financial literature supports the use of multiple methods.* (italics added) (Morin, p. 239)

> Professor Eugene Brigham, a widely respected scholar and finance academician asserted:

> *In practical work, it is often best to use all three methods -CAPM, bond yield plus risk premium, and DCF* - and then apply judgement when the methods produce different results. People experienced in estimating capital costs recognize that both careful analysis and very fine judgements are required. It would be nice to pretend that these judgements are unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible. (italics added) (Morin, pp. 239-240)

> Another prominent finance scholar, Professor Stewart Myers, in his best-selling corporate finance textbook stated:

> *The constant growth formula and the capital asset pricing model are two different ways of getting a handle on the same problem.* (italics added) (Morin, p. 240)

[14] Roger A. Morin, Regulatory Finance-Utilities' Cost of Capital, 1994, Public Utilities Reports, Inc., Arlington, VA, pp. 231-232, 239-240.

In an earlier article, Professor Myers explained the point more fully:

> Use more than one model when you can. Because estimating the opportunity cost of capital is difficult, only a fool throws away useful information. That means you should not use any one model or measure mechanically and exclusively. Beta is helpful as one tool in a kit, to be used in parallel with DCF models or other techniques for interpreting capital market data. (Morin, p. 240)

In view of the foregoing, it is clear that investors are aware of all of the models available for use in determining a common equity cost rate. The EMH requires the assumption that, collectively, investors use them all.

B. Discounted Cash Flow Model (DCF)

1. Theoretical Basis

Q. What is the theoretical basis of the DCF model?

A. The theory of the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be determined by discounting the cash flows at the cost of capital, or the capitalization rate. DCF theory suggests that an investor buys a stock for an expected total return rate which is expected to be derived from cash flows received in the form of dividends plus appreciation in market price (the expected growth rate). Thus, the dividend yield on market price plus a growth rate equals the capitalization rate, i.e., the total return rate expected by investors.

Q. Please comment on the applicability of the DCF model in establishing a cost of common equity for Aqua IL – Woodhaven.

A. The extent to which the DCF is relied upon should depend upon the extent to which

the cost rate results differ from those resulting from the use of other cost of common equity models because the DCF model has a tendency to mis-specify investors' required return rate when the market value of common stock differs significantly from its book value. Market values and book values of common stocks are seldom at unity. The market-based DCF model will result in a total annual dollar return on book common equity equal to the total annual dollar return expected by investors only when market and book values are equal, a rare and unlikely situation. In recent years, the market values of utilities' common stocks have been well in excess of their book values as shown on page 1 of Aqua Schedule 3.4 ranging between 191.35% and 221.41% for the proxy group of six C.A. Turner water companies, between 206.93% and 225.26% for the proxy group of three Value Line (Std. Ed.) water companies as shown on page 1 of Aqua Schedule 3.5, and between 170.39% and 187.01% for the proxy group of fifteen utilities selected on the basis of least relative distance as shown on page 1 of Aqua Schedule 3.6.

Mathematically, the DCF model understates/overstates investors' required return rate when market value exceeds/is less than book value because, in many instances, market prices reflect investors' assessments of long-range market price growth potentials (consistent with the infinite investment horizon implicit in the standard regulatory version of the DCF model) not fully reflected in analysts' shorter range forecasts of future growth for earnings per share (EPS) and dividends per share (DPS) accounting proxies. This indicates the need to better match market prices with investors' longer range growth expectations embedded in those prices. However, the understatement/overstatement of investors' required return rate associated with the application of the market price-based DCF model to the book value of common equity clearly illustrates why reliance upon a single common equity cost rate model should be avoided.

2. Applicability of a Market-Based Common Equity Cost Rate to a Book Value Rate Base

Q. Is it reasonable to expect the market values of utilities' common stocks to continue to sell well above their book values?

A. Yes. I believe that the common stocks of utilities will continue to sell substantially above their book values, because many investors, especially individuals who traditionally committed less capital to the equity markets, will likely continue to commit a greater percentage of their available capital to common stocks in view of lower interest rate alternative investment opportunities and to provide for retirement. The recent past and current capital market environment is in stark contrast to the late 1970's and early 1980's when very high (by historical standards) yields on secured debt instruments in public utilities were available.

The significant recent increases in market-to-book ratios have been influenced by factors other than fundamentals such as actual and reported growth in earnings per share (EPS) and dividends per share (DPS). For example, David Wessel in the Wall Street Journal states:[15]

> So if the fundamentals aren't driving stock prices, then what is? It's that hard-to-quantify investor appetite for buying stocks. The market has been strong because lots of people want to hold stocks. It will continue to be strong as long as they continue to be willing to pay more for stocks than they used to.
>
> * * *
>
> Psychoanalyzing investors is a favorite pastime, from Wall

[15] "If This is a Bubble, It Sure is Hard to Pop," Wall Street Journal, March 30, 1999, pp. A1 and A6.

> Street saloons to American livingrooms. Perhaps baby boomers, intent on saving for retirement and their children's college tuition, see stocks as the only smart alternative. Perhaps Generation-Xers fear Social Security will vanish before they retire, and are bulking up on stocks. Perhaps mutual-fund marketing has diverted billions of dollars that once would have ended up in low-interest bank accounts. Perhaps the internet age has dispelled the mystique of the stock market; everyone can do it.

Traditional rate base/rate of return regulation, where a market-based common equity cost rate is applied to a book value rate base, presumes that market-to-book ratios are one. However, there is ample empirical evidence over sustained periods which demonstrate that this is an incorrect presumption. Market-to-book ratios of one are rarely the case as there are many factors affecting the market price of common stocks, in addition to earnings. Moreover, allowed ROEs have a limited effect on utilities' market/book ratios as market prices of common stocks are influenced by a number of other factors beyond the direct influence of the regulatory process.

For example, Phillips[16] states:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.'

[16] Id., at p. 395.

In addition, Bonbright[17] states:

> In the first place, commissions cannot forecast, except within wide limits, the effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, *whatever the initial market prices may be, they are sure to change not only with the changing prospects for earnings, but with the changing outlook of an inherently volatile stock market.* In short, market prices are beyond the control, though not beyond the influence of rate regulation. Moreover, even if a commission did possess the power of control, any attempt to exercise it ... would result in harmful, uneconomic shifts in public utility rate levels. (italics added)

In view of the foregoing, a mismatch results in the application of the DCF model as market prices reflect long range expectations 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.

Q. Please explain why a DCF-derived common equity cost rate mis-specifies investors' expected common equity cost rate when the market/book ratio is greater or less than unity (100%).

A. Under the DCF model, the rate of return investors require is related to the price paid for a stock i.e., market price is the basis upon which they formulate the required rate of return. A regulated utility is limited to earning on its net book value (depreciated original cost) rate base. As discussed previously, market values differ from book values for many reasons unrelated to earnings. Thus,

[17] James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates, 1988, Public Utilities Reports, Inc., Arlington, VA, p. 334.

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 investors' 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.

Aqua Schedule 3.7 demonstrates how a market-based DCF cost rate applied to a book value which is either below or above market value will either understate or overstate investors' expectations because these expectations are based on a required return on market value. As shown, there is no realistic opportunity to earn the market-based rate of return on book value. Note that in Column 1, investors expect a 10.00% return on a market price of $24.00. Moreover, as shown in Column 2, when the 10.00% return rate on market value is applied to book value which is approximately 55.5% of market value, the total annual return opportunity is just $1.333 on book value. With an annual dividend of $0.960, there is an opportunity for growth of $0.373 which translates to just 1.55% in contrast to the 6.00% growth in market price expected by investors. There is no way to possibly achieve the expected growth of $1.440 or 6.00% absent a huge cut in the annual dividend, an unreasonable expectation which would result in an extremely adverse reaction by investors because it would be a sign of extreme financial distress.

Conversely, in Column 3, where the market-to-book ratio is 80%, when the 10.00% return rate on market value is applied to a book value which is approximately 25.0% greater than market value, the total annual return opportunity is $3.000 on book value with an annual dividend of $0.960, there is an opportunity for growth of $2.040 which translates to 8.50% in contrast to the

6.00% growth in market price expected by investors.

In view of the foregoing, it is clear that the DCF model either understates or overstates investors' required cost of common equity capital when market values exceed or are less than their underlying book values and thus multiple cost of common equity models should be relied upon when estimating investors' expectations.

Q. Have any commissions explicitly stated that the DCF model should not be relied upon exclusively?

A. Yes. As stated previously, the majority of regulatory commissions rely upon a combination of the various cost of common equity models available.

Specifically, the Iowa Utilities Board (IUB) has recognized the tendency of the DCF model to understate investors' expected cost of common equity capital when market values are significantly above their book values. In its June 17, 1994 Final Decision and Order in Re U.S. West Communications, Docket No. RPU-93-9 the IUB stated:[18]

> While the Board has relied in the past on the DCF model, in *Iowa Electric Light and Power Company*, Docket No. RPU-89-9, "Final Decision and Order" (October 15, 1990), the Board stated: '[T]he DCF model may understate the return on equity in some circumstances. This is particularly true when the market is relatively volatile and the company in question has a market-to-book ratio in excess of one." Those conditions exist in this case and the Board will not rely on the DCF return. (Consumer Advocate Ex. 367, See Tr. 2208, 2250, 2277, 2283-2284). *The DCF approach underestimates the cost of equity needed to assure capital attraction during this time of market uncertainty and volatility. The board will, therefore, give preference to the risk premium approach.* (italics added)

[18] Re: U.S. West Communications, Inc., Docket No. RPU-93-9, 152 PUR4th at 459.

Similarly, in 1994, the Indiana Utility Regulatory Commission (IURC), for example, recognized the tendency of the DCF model to understate the cost of equity when market value exceeds book value[19]:

> In determining a common equity cost rate, we must again recognize the tendency of the traditional DCF model, . . . to understate the cost of common equity. As the Commission stated in Indiana-Mich. Power Co. (BPU 8/24/90), Cause No. 38728, 116 PUR 4th 1, 17-18, *"the unadjusted DCF result is almost always well below what any informed financial analyst would regard as defensible, and therefore, requires an upward adjustment based largely on the expert witness's judgement."* (italics added)
>
> * * *
>
> [u]nder the traditional DCF model . . . the appropriate earnings level of the utility would not be derived by applying the DCF result to the market price of the Company's stock . . . it would be applied to the utility's net original cost rate base. *If the market price of the stock exceeds its book value, . . . the investor will not achieve the return which the model finds is necessary.* (italics added)

Also, the Hawaii Public Utilities Commission (HPUC) recognized this phenomenon in a decision dated June 30, 1992[20] in a case regarding Hawaiian Electric Company, Inc., when it stated:

> In this docket, as in other rate proceedings, experts disagree on the relative merits of the various methods of determining the cost of common equity. In this docket, HECO is particularly critical of the use of the constant growth DCF methodology. It asserts that method is imbued with downward bias and, thus, its use will understate common equity cost. *We are cognizant of the shortcomings of the DCF method.* There are, however, shortcomings to be found with the use of CAPM and the RP methods as well. We reiterate that, despite the problems with the use of any methodology, *all methods should be considered and*

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19 Re: Indiana-American Water Company, Inc., Cause No. 39595, 150 PUR4th at 167-168.

20 Re: Hawaiian Electric Company, Inc., Docket No. 6998, 134 PUR4th at 479.

that the DCF method and the combined CAPM and RP methods should be given equal weight. (italics added)

More recently, the Pennsylvania Public Utilities Commission, (PaPUC) in its January 16, 2004 Opinion and Order in Docket Nos. R-00038304 (PAWC) and C0001 through C00171 re: Pennsylvania-American Water Company (PAWC) stated:

> As we determined in PAWC's prior base rate base, at Docket No. R-00016339 (Order entered January 25, 2002), a 60 basis point adjustment to the market based common equity cost rate will compensate PAWC for the aforementioned application of a market based common equity cost rate to a book value common equity ratio.
>
> PAWC indicates that a preliminary DCF calculation, which is computed using the market price of PAWC's common stock, should be adjusted to reconcile the divergence between market and book values.
>
> We agree that a financial risk adjustment is proper. Accordingly, we find that, in order to place the computed DCF result on a consistent basis with the greater financial risk, inherent in PAWC's book value-derived capital structure ratios, a 60 basis point financial risk adjustment above our 10 percent representative DCF common equity cost rate recommendation is warranted.

Q. Do other cost of common equity models contain unrealistic assumptions and have shortcomings?

A. Yes. That is why I am not recommending that any of the models be relied upon exclusively. 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.

3. Application of the Single-Stage DCF Model

a. Dividend Yield

Q. Please describe the dividend yield you used in your application of the DCF model.

A. The unadjusted dividend yields are based upon an average of a recent spot date (December 7, 2004) as well as an average of the three months ended November 30, 2004, respectively, which are shown on Aqua Schedule 3.11. The average unadjusted yield is 3.2% for the six C.A. Turner water companies, 3.2% for the three Value Line (Std. Ed.) water companies, and 3.7% for the fifteen utilities selected on the basis of least relative distance.

b. Discrete Adjustment of Dividend Yield

Q. Please explain the dividend growth component shown on Aqua Schedule 3.9, pages 1 and 2, Column 2.

A. Because dividends are paid quarterly, or periodically, as opposed to continuously (daily), an adjustment to the dividend yield must be made. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

Since the various companies in the proxy group increase their quarterly dividend at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the D_1 expression, or $D_{1/2}$. This is a conservative approach which does not overstate the dividend yield which should be representative of the next twelve-month period. Therefore, the actual average dividend yields in Column 1 on pages 1 and 2 of Aqua Schedule 3.9 have been

adjusted upward to reflect one-half the growth rates shown in Column 4.

c. Selection of Growth Rates for Use in the Single-Stage DCF Model

Q. Please explain the basis of the growth rates of the proxy group of six C.A. Turner water companies, the proxy group of three Value Line (Std. Ed.) water companies, and the proxy group of fifteen utilities selected on the basis of least relative distance which you use in your application of the DCF model.

A. Aqua Schedule 3.12 indicates that 79.4% of the common shares of the proxy group of six C.A. Turner water companies, 70.0% of the common shares of the proxy group of three Value Line (Std. Ed.) water companies, and 53.4% of the common shares of the proxy group of fifteen utilities selected based on least relative distance are held by individuals as opposed to institutional investors. Individual investors are particularly likely to place great significance on the opinions expressed by financial information services, such as Value Line and Thomson FN/First Call, which are easily accessible and/or available on the Internet.

Forecasts by analysts, including Value Line, are typically limited to five years. In my opinion, I believe that investors in water utilities would have little interest in historical growth rates beyond the most recent five years because an historical five-year period balances the five-year period for projected growth rates. Consequently, the use of five-year historical and five-year projected growth rates in earnings per share (EPS) and dividends per share (DPS) as well as the sum of internal and external growth in per share value (BR + SV) is appropriate to consider in the determination of a growth rate for use in this application of the DCF model. In addition, investors realize that analysts have significant insight into the dynamics of the industries and they analyze individual

companies as well as companies' abilities to effectively manage the effects of changing laws and regulations. Consequently, I have reviewed analysts' projected growth in EPS, as well as historical and projected five-year compound growth rates in EPS, DPS and (BR + SV) for each company in each proxy group. The historical growth rates are from Value Line or calculated in a manner similar to Value Line, while the projected growth rates in earnings are from Value Line and Thomson FN/First Call forecasts. Thomson FN/First Call growth rate estimates are not available for DPS and internal growth, and they do not include the Value Line projections.

In addition to evaluating EPS and DPS growth rates, it is reasonable to assume that investors also assess (BR + SV). The concept is based on well documented financial theory that future dividend growth is a function of the portion of the overall return to investors which is reinvested in the firm plus the sales of new common stock. Consequently, the growth component as proxied by internal and external growth is defined as follows:

$$g = BR + SV$$

Where:

B = the fraction of earnings retained by the firm, i.e., retention ratio

R = the return on common equity

S = the growth in common shares outstanding

V = the premium/discount of a company's stock price relative to its book value, i.e., one minus the complement of the market/book ratio.

Consistent with the use of five-year historical and five-year projected growth rates in EPS and DPS, I have derived five-year historical and five-year projected (BR + SV) growth. Projected EPS growth rate averages are shown in Column 4 on page 2, while historical and projected growth in DPS, EPS, and BR

+ SV is shown in Column 4, page 1 of Aqua Schedule 3.9. The bases of these growth rates are summarized for the companies in each proxy group on page 1, Aqua Schedule 3.13. Supporting growth rate data are detailed on pages 2 through 9 of Aqua Schedule 3.13, while pages 10 through 25 contain all of the most current Value Line Investment Survey data for the companies in all three proxy groups.

d. Conclusion of Single-Stage Cost Rates

Q. Please summarize the single-stage growth DCF model results.

A. As shown on Aqua Schedule 3.9, the results of the applications of the single-stage DCF model are 10.5% for the proxy group of six C.A. Turner water companies, 10.9% for the proxy group of three Value Line (Std. Ed.) water companies, and 10.7% for the proxy group of fifteen utilities. In arriving at conclusions of indicated common equity cost rates for the two proxy groups, I included only those single-stage DCF results which are greater than 200 basis points above the average prospective yield on Moody's A rated public utility bonds of 6.6%, or 8.6%, based upon Blue Chip Financial Forecasts' December 1, 2004 consensus forecast of about 50 economists of the expected yield on Aaa rated corporate bonds as discussed subsequently and derived in Note 3 on page 6 of Aqua Schedule 3.14. It is necessary to adjust the average Aaa rated corporate bond yield to be equivalent to a Moody's A2 rated public utility bond. As detailed in Note 2 on page 1 of Aqua Schedule 3.14, an adjustment to the average prospective yield on Aaa rated corporate bonds of 0.5% was required. Thus, the average prospective yield on Moody's A rated public utility bonds is 6.6%.

Based upon a review of recent authorized returns on common equity

(ROE) in Illinois vis-à-vis concurrent estimates of the forecasted average yield on A rated public utility bonds, I determined that the equity risk premium implicit in recent ICC authorized ROEs is between 300 and 450 basis points. In addition, the ICC's authorized common equity cost rate for Aqua IL in Docket No. 04-0403 of 10.16% entered April 16, 2004 was 356 basis points above the then prospective yield on A rated public utility bonds of 6.6%. In accordance with the EMH, investors are aware of these implicit equity risk premia and, in my opinion, would not consider returns providing an equity risk premium of only 200 basis points either reasonable or credible. Therefore, it is reasonable, if not conservative, to eliminate any single-stage DCF results which are no more than 200 basis points above the current prospective average yield on A rated public utility bonds of 6.6%.

4. Application of the Quarterly Version of the DCF Model

Q. Please describe the quarterly version of the DCF model which you use to calculate the indicated common equity cost rates.

A. The traditional, or annual, single-stage, DCF model is based upon the assumption that dividends are paid annually. Virtually every utility pays dividends on a quarterly basis. The quarterly DCF model takes into account the reality of quarterly payments of dividends to investors. As Morin states[21] (Aqua Schedule 3.10, page 5):

> By analogy, a bank rate on deposits that does not take into consideration the timing of the interest payments understates the true yield if the customer receives the interest payments more than one a year. The actual yield will exceed the stated nominal rate.

[21] Id., p. 184.

The form of the model employed is shown in detail in Equation (7-2) shown on Aqua Schedule 3.10, page 5, an excerpt from Morin's text, Regulatory Finance: Utilities' Cost of Capital.

a. Selection of Market Prices for Use in the Quarterly Version of the DCF Model

Q. What periods of time have you used for market prices in order to employ the quarterly DCF model?

A. As indicated in Aqua Schedule 3.10, I employed the recent spot market prices as of December 7, 2004 as well as average market prices for the three months ended November 30, 2004 consistent with my application of the single-stage DCF model previously discussed.

b. Selection of Growth Rates for Use in the Quarterly Version of the DCF Model

Q. What growth rates did you use in your application of the quarterly version of the DCF model?

A. I utilized growth rates for each company based upon historical and projected growth in DPS, EPS, and BR+SV as well as based upon average projected growth in EPS calculated in a manner identical to the average growth rates for each proxy group previously discussed in this testimony.

c. Conclusion of Quarterly Version DCF Cost Rates

Q. Please summarize the quarterly DCF model results.

A. As shown on Aqua Schedule 3.10, pages 1 and 2, the results of the application of the quarterly version of the DCF model are 10.7% for the proxy group of six

C.A. Turner water companies, 11.1% for the proxy group of three Value Line (Std. Ed.) water companies, and 10.8% for the proxy group of fifteen utilities. As explained in detail above relative to the single-stage DCF model results, I also eliminated those quarterly DCF model results which were no more than 200 basis points above the prospective average yield on Moody's A rated public utility bonds of 6.6%, or 8.6%.

5. Conclusion of DCF Cost Rates

Q. Please summarize the DCF model results.

A. As shown on Aqua Schedule 3.8, the results of the applications of the DCF models are 10.6% for the proxy group of six C.A. Turner water companies, 11.0% for the proxy group of three Value Line (Std. Ed.) water companies, and 10.8% for the proxy group of fifteen utilities selected on the basis of least relative distance.

C. The Risk Premium Model (RPM)

1. Theoretical Basis

Q. Please describe the theoretical basis of the RPM.

A. Risk Premium theory indicates that the cost of common equity capital is greater than the prospective company-specific cost rate for long-term debt capital. In other words, the cost of common equity equals the expected cost rate for long-term debt capital plus a risk premium to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on the corporation's assets and earnings.

Q. Some analysts state that the RPM is another form of the CAPM. Do you agree?

A. While there are some similarities, there is a very significant distinction between the two models. The RPM and CAPM both add a "risk premium" to an interest rate. However, the beta approach to the determination of an equity risk premium in the RPM should not be confused with the CAPM. Beta is a measure of systematic, or market, risk, a relatively small percentage of total risk (the sum of both non-diversifiable systematic and diversifiable unsystematic risk). Unsystematic risk is fully captured in the RPM through the use of the prospective long-term bond yield as can be shown by reference to pages 3 through 9 of Aqua Schedule 3.2, which confirm that the bond rating process involves an assessment of all business and financial risks. In contrast, the use of a risk-free rate of return in the CAPM does not, and by definition cannot, reflect a company's specific i.e., unsystematic risk. Consequently, a much larger portion of the total common equity cost rate is reflected in the company-specific bond yield (a product of the bond rating) than is reflected in the risk-free rate in the CAPM, or indeed even by the dividend yield employed in the DCF model. Moreover, the financial literature recognizes the RPM and CAPM as two separate and distinct cost of common equity models as discussed previously.

Q. Have you performed RPM analyses of common equity cost rate for the two proxy groups?

A. Yes. The results of my application of the RPM are summarized on page 1 of Aqua Schedule 3.14. On Line No. 3, page 1, Aqua Schedule 3.14, I show the average expected yield on A rated public utility bonds of 6.6%. On Line No. 4, I show the adjustments, if necessary, that need to be made to the average 6.6%

expected A rated utility bond yield so that the expected yields of 6.6% and 6.7% in Line No. 5 are reflective of the proxy group of six C.A. Turner water companies' average Moody's bond rating of A2, the average Moody's bond rating of the three Value Line (Std. Ed.) water companies of A2, and the average Moody's bond rating of A3 for the proxy group of fifteen utilities selected on the basis of least relative distance as shown on page 2 of Aqua Schedule 3.14. On Line No. 6 of page 1, my conclusion of an equity risk premium applicable to each proxy group is shown, while the total risk premium common equity cost rates are shown on Line No. 7.

2. Estimation of Expected Bond Yield

Q. Please explain the basis of the expected bond yield of 6.6% applicable to the average company in both proxy groups.

A. Because the cost of common equity is prospective, a prospective yield on similarly-rated long-term debt is essential. As shown on Aqua Schedule 3.14, page 2, the average Moody's bond rating is A2 for both the proxy group of six C.A. Turner water companies and the three Value Line (Std. Ed.) water companies, and A3 for the proxy group of fifteen utilities. I relied upon a consensus forecast of about 50 economists of the expected yield on Aaa rated corporate bonds for the six calendar quarters ending with the first calendar quarter of 2006 as derived from the December 1, 2004 Blue Chip Financial Forecasts (shown on page 7 of Aqua Schedule 3.14). As shown on Line No. 1 of page 1 of Aqua Schedule 3.14, the average expected yield on Moody's Aaa rated corporate bonds is 6.1%. It is necessary to adjust that average yield to be equivalent to a Moody's A2 rated public utility bond. Consequently, an adjustment to the average prospective yield on Aaa rated corporate bonds of

0.5% was required. It is shown on Line No. 2, page 1 of Aqua Schedule 3.14 and explained in Note 2 at the bottom of the page. After adjustment, the expected bond yield applicable to a Moody's A rated public utility bond is 6.6% as shown on Line No. 3, page 1 of Aqua Schedule 3.14.

Because both the proxy group of six C.A. Turner water companies' and the proxy group of three Value Line (Std. Ed.) water companies' average Moody's bond rating is A2, no adjustment is necessary to make the prospective bond yield applicable to an A2 public utility bond. In addition, because the proxy group of fifteen utilities selected on the basis of least relative resistance average Moody's bond rating is A3, an adjustment of the expected yield on A rated public utility bonds of 6.6% is necessary. As described in Note 4 on page 1 of Aqua Schedule 3.14, such an adjustment rounds to 0.0%. Therefore, the expected specific bond yield is 6.6% for both proxy groups of water companies and 6.7% for the proxy group of fifteen utilities.

3. Estimation of the Equity Risk Premium

Q. Please explain the method utilized to estimate the equity risk premium.

A. I evaluated the results of two different historical equity risk premium studies, as well as Value Line's forecasted total annual market return in excess of the prospective yield on high grade corporate bonds, as detailed on pages 5, 6 and 8 of Aqua Schedule 3.14. As shown on Line No. 3, page 5 of Aqua Schedule 3.14, the mean equity risk premium based on both of the studies is 4.0% applicable to the proxy group of six C.A. Turner water companies and 4.2% applicable to both the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance. These estimates are the result of an average of a beta-derived

historical equity risk premium and a forecasted total market equity risk premium as well as the mean historical equity risk premium applicable to public utilities with bonds rated A based upon holding period returns.

The basis of the beta-derived equity risk premia applicable to the proxy groups is shown on page 6 of Aqua Schedule 3.14. Beta-determined equity risk premia should receive substantial weight because betas are derived from the market prices of common stocks over a recent five-year period. Beta is a meaningful measure of prospective relative risk to the market as a whole and is a logical means by which to allocate a relative share of the market's total equity risk premium.

The total market equity risk premium utilized is 5.7% and is based upon an average of both the long-term historical and forecasted market risk premia of 6.3% and 5.1%, respectively, as shown on page 6 of Aqua Schedule 3.14. To derive the historical market equity risk premium, I used the most recent Ibbotson Associates' data on holding period returns for the S&P 500 Composite Index and Salomon Brothers Long-term High-grade Corporate Bond Index covering the period 1926-2003. The use of holding period returns over a very long period of time is useful in the beta approach. As Ibbotson Associates'[22] Valuation Edition 2004 Yearbook states:

> The estimate of the equity risk premium depends on the length of the data series studied. A proper estimate of the equity risk premium requires a data series long enough to give a reliable average without being unduly influenced by very good and very poor short-term returns. When calculated using a long data series, the historical equity risk premium is relatively stable.[5] Furthermore, because an average of the realized equity risk premium is quite volatile when calculated using a short history, using a long series makes it less likely that the analyst can justify any number he or she wants. The magnitude of how shorter

[22] Ibbotson Associates, Stocks, Bonds, Bills and Inflation – Valuation Edition 2004 Yearbook, pp. 76-77.

periods can affect the result will be explored later in this chapter.

> Some analysts estimate the expected equity risk premium using a shorter, more recent time period on the basis that recent events are more likely to be repeated in the near future; furthermore, they believe that the 1920s, 1930s and 1940s contain too many unusual events. This view is suspect because all periods contain "unusual" events. Some of the most unusual events this century took place quite recently, including the inflation of the late 1970s and early 1980s, the October 1987 stock market crash, the collapse of the high-yield bond market, the major contraction and consolidation of the thrift industry, the collapse of the Soviet Union, and the development of the European Economic Community – all of these happened in the last 20 years.
>
> It is even difficult for economists to predict the economic environment of the future. For example, if one were analyzing the stock market in 1987 before the crash, it would be statistically improbable to predict the impending short-term volatility without considering the stock market crash and market volatility of the 1929-1931 period.
>
> Without an appreciation of the 1920s and 1930s, no one would believe that such events could happen. The 78-year period starting with 1926 is representative of what can happen: it includes high and low returns, volatile and quiet markets, war and peace, inflation and deflation, and prosperity and depression. Restricting attention to a shorter historical period underestimates the amount of change that could occur in a long future period. Finally, because historical event-types (not specific events) tend to repeat themselves, long-run capital market return studies can reveal a great deal about the future. Investors probably expect "unusual" events to occur from time to time, and their return expectations reflect this. (footnote omitted)

In addition, the use of long-term data in a RPM model is consistent with the long-term investment horizon presumed by the DCF model. Consequently, the long-term arithmetic mean total return rates on the market as a whole of 12.4% and the long-term arithmetic mean yield on corporate bonds of 6.1% were used, as shown at Line Nos. 1 and 2 of page 6 of Aqua Schedule 3.14. As shown on Line No. 3 of page 6, the resultant long-term historical equity risk

premium on the market as a whole is 6.3%.

I used arithmetic mean return rates because they are appropriate for cost of capital purposes. As Ibbotson Associates state in their Valuation Edition 2004 Yearbook[23]:

> 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.
>
> The argument for using the arithmetic average is quite straightforward. In looking at projected cash flows, the equity risk premium that should be employed is the equity risk premium that is expected to actually be incurred over the future time periods. Graph 5-3 shows the realized equity risk premium for each year based on the returns of the S&P 500 and the income return on long-term government bonds. (The actual, observed difference between the return on the stock market and the riskless rate is known as the realized equity risk premium.) There is considerable volatility in the year-by-year statistics. At times the realized equity risk premium is even negative.

As Ibbotson Associates[24] states in their 1999 Yearbook:

> The expected equity risk premium should always be calculated using the arithmetic mean. The arithmetic mean is the rate of return which, when compounded over multiple periods, gives the mean of the probability distribution of ending wealth values....Stated another way, the arithmetic mean is correct because an investment with uncertain returns will have a higher expected ending wealth value than an investment which earns,

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[23] Id., p. 71.

[24] Ibbotson Associates, Stocks, Bonds, Bills and Inflation - 1999 Yearbook, pp. 157-158.

> with certainty, its compound or geometric rate of return every year....*Therefore, in the investment markets, where returns are described by a probability distribution, the arithmetic mean is the measure that accounts for uncertainty, and is the appropriate one for estimating discount rates and the cost of capital.* (italics added)

Ex-post (historical) total returns and equity risk premium spreads differ in size and direction over time. This is precisely why the arithmetic mean is important as it provides insight into the variance and standard deviation of returns. This prospect for variance, as captured in the arithmetic mean, provides the valuable insight needed by investors to estimate future risk when making a current investment. Absent such valuable insight into the potential variance of returns, investors cannot meaningfully evaluate prospective risk. As discussed previously, all of the cost of common equity models, including the DCF, are premised upon the EMH, that all publicly available information is reflected in the market prices paid. If investors relied upon the geometric mean of ex-post spreads, they would have no insight into the potential variance of future returns because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, *critical to risk analysis*.

The basis of the forecasted market equity risk premium can be found on Line Nos. 4 through 6 on page 6 of Aqua Schedule 3.14. It is derived from an average of the most recent 3-month (using the months of September 2004 through November 2004) and a recent spot (December 3, 2004) median market price appreciation potentials by Value Line as explained in detail in Note 1 on page 3 of Aqua Schedule 3.15. The average expected price appreciation is 42% which translates to 9.54% per annum and, when added to the average (similarly calculated) dividend yield of 1.64% equates to a forecasted annual total return rate on the market as a whole of 11.18%, rounded to 11.2%. Thus, this methodology is consistent with the use of the 3-month and spot dividend yields in

my application of the DCF model. To derive the forecasted total market equity risk premium of 5.1% shown on Aqua Schedule 3.14, page 6, Line No. 6, the December 1, 2004 forecast of about 50 economists of the expected yield on Moody's Aaa rated corporate bonds for the six calendar quarters ending with the first calendar quarter 2006 of 6.1% from Blue Chip Financial Forecasts was deducted from the Value Line total market return of 11.2%. The calculation resulted in an expected market risk premium of 5.1%.

The average of the historical and projected market equity risk premia of 6.3% and 5.1% is 5.7%.

On page 9 of Aqua Schedule 3.14, the most current Value Line (Standard Edition) betas for the companies in all three proxy groups are shown. Applying the average beta of each proxy group to the average market equity risk premium of 5.7% results in a beta adjusted equity risk premium of 3.8% for the proxy group of six C.A. Turner water companies, 4.1% for both the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance as shown on Aqua Schedule 3.14, page 6, Line No. 9.

A mean equity risk premium of 4.2% applicable to companies with A rated public utility bonds was calculated based upon holding period returns from a study using public utilities, as shown on Line No. 2, page 5 of Aqua Schedule 3.14, and detailed on page 8 of the same schedule.

The equity risk premia applicable to the proxy group of six C.A. Turner water companies, the proxy group of three Value Line (Std. Ed.) water companies, and to the proxy group of fifteen utilities selected on the basis of least relative distance are the averages of the beta-derived premia and that based upon the holding period returns of public utilities with A rated bonds, as summarized on Aqua Schedule 3.14, page 5, i.e., 4.0%, 4.2%, and 4.2%,

respectively.

Q. What are the RPM calculated common equity cost rates?

A. They are 10.6% for the six C.A. Turner water companies, 10.8% for the three Value Line (Std. Ed.) water companies, and 10.9% for the fifteen utilities as shown on Aqua Schedule 3.14, page 1.

Q. Some critics of the RPM model claim that its weakness is that it presumes a constant equity risk premium. Is such a claim valid?

A. No. The equity risk premium varies inversely with interest rate changes, although not in tandem with those changes. This presumption of a constant equity risk premium is no different than the presumption of a constant "g", or growth component, in the DCF model. If one calculates a DCF cost rate today, the absolute result "k", as well as the growth component "g", would invariably differ from a calculation made just one or several months earlier. This implies that the "g" does change, although in the application of the standard DCF model, the "g" is presumed to be constant. Hence, there is no difference between the RPM and DCF models in that both models assume a constant component, but in reality, these components, the "g" and the equity risk premium both change.

As Morin[25] states with respect to the DCF model:

> It is not necessary that *g* be constant year after year to make the model valid. *The growth rate may vary randomly around some average expected value. Random variations around trend are perfectly acceptable, as long as the mean expected growth is constant.* The growth rate must be 'expectationally constant' to

[25] Id., p. 111.

use formal statistical jargon. (italics added)

The foregoing confirms that the RPM is similar to the DCF model. Both assume an "expectationally constant" risk premium and growth rate, respectively, but in reality both vary (change) randomly around an arithmetic mean. Consequently, the use of the arithmetic mean, and not the geometric mean is confirmed as appropriate in the determination of an equity risk premium as discussed previously.

D. The Capital Asset Pricing Model (CAPM)

1. Theoretical Basis

Q. Please explain the theoretical basis of the CAPM.

A. CAPM theory defines risk as the covariability of a security's returns with the market's returns. This covariability is measured by beta ("β"), an index measure of an individual security's variability relative to the market. A beta less than 1.0 indicates lower variability while a beta greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all other risk, i.e., all non-market or unsystematic risk, can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market, or systematic, risk. The CAPM presumes that investors require compensation for risks that cannot be eliminated through diversification. Systematic risks are caused by macroeconomic and other events that affect the returns on all assets. Essentially, the model is applied by adding a risk-free rate of return to a market risk premium. This market risk premium is adjusted proportionately to reflect the systematic risk of the individual security relative to the market as measured by beta. The traditional CAPM model is expressed as:

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

Where:

R_s	=	Return rate on the common stock
R_f	=	Risk-free rate of return
R_m	=	Return rate on the market as a whole
β	=	Adjusted beta (volatility of the security relative to the market as a whole)

Numerous tests of the CAPM have confirmed its validity. These tests have measured the extent to which security returns and betas are related as predicted by the CAPM. However, Morin observes that while the results support the notion that beta is related to security returns, it has been determined that the empirical Security Market Line (SML) described by the CAPM is not as steeply sloped as the predicted SML. Morin[26] states:

> With few exceptions, the empirical studies agree that ... low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\,\beta(R_M - R_F) + (1-x)\;\beta(R_M - R_F)$$
>
> where x is a fraction to be determined empirically. ...the value of x that best explains the observed relationship is between 0.25 and 0.30. If x = 0.25, the equation becomes:
>
> $$K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$[27]

[26] Id., at p. 321.

[27] Id., at pp. 335-336.

In view of theory and practical research, I have applied both the traditional CAPM and the empirical CAPM to the companies in the proxy groups and averaged the results.

2. Risk-Free Rate of Return

Q. Please describe your selection of a risk-free rate of return.

A. My applications of the traditional and empirical CAPM are summarized on Aqua Schedule 3.15, page 1. As shown on Line Nos. 1 and 4, the risk-free rate adopted for both applications is 5.4%. It is based upon the average consensus forecast of the reporting economists in the December 1, 2004 Blue Chip Financial Forecasts as shown in Note 2, page 4, of the expected yields on long-term U.S. Treasury bonds for the six quarters ending with the first calendar quarter 2006.

Q. Why is the prospective yield on long-term U.S. Treasury Bonds appropriate for use as the risk-free rate?

A. The yield on long-term T-Bonds is almost risk-free and its term is consistent with the long-term cost of capital to public utilities measured by the yields on A rated public utility bonds, and is consistent with the long-term investment horizon inherent in utilities' common stocks. Therefore, it is consistent with the long-term investment horizon presumed in the standard DCF model employed in regulatory ratemaking. Moreover, Morin[28] states:

Equity investors generally have an investment horizon far in

[28] Id., at p. 308.

> excess of fifty days. More importantly, the short-term T-bill yields reflect the impact of factors different from those influencing long-term securities, such as common stock. For example, the premium for expected inflation absorbed into 90-day Treasury bills is likely to be far different than the inflationary premium absorbed into long-term securities yields. The yields on long-term Treasury bonds match more closely with common stock returns. *For investors with a long time horizon, a long-term government bond is almost risk-free.* (italics added)

In addition, Ibbotson Associates note in their Valuation Edition 2003 Yearbook[29]

> The horizon of the chosen Treasury security should match the horizon of whatever is being valued. When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a long-term Treasury bond. Note that the horizon is a function of the investment, not the investor.

In conclusion, the average expected yield on long-term Treasury Bonds is the appropriate proxy for the risk-free rate in the CAPM because it is less volatile than yields on Treasury Bills, is almost risk-free as noted by Morin above and is consistent with the long-term investment horizon implicit in common stocks.

3. Market Equity Risk Premium

Q. Please explain the estimation of the expected equity risk premium for the market.

A. First, I estimate investors' expected total return rate for the market. Then I estimate the expected risk-free rate which I subtract from the expected total return rate for the market. The result is an expected equity risk premium for the market, some proportion of which must be allocated to the companies in the proxy group through the use of beta. As a measure of risk relative to the market

[29] Id., p. 53.

as a whole, the beta is an appropriate means by which to apportion the market risk premium to a specific company or group.

As shown on Aqua Schedule 3.15, page 1, Line No. 2, the proportional market equity risk premium, based on the traditional CAPM, is 4.3% for the proxy group of six C.A. Turner water companies and 4.7% for both the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance. Applying the empirical CAPM results in an equity risk premium of 4.8% for the six C.A. Turner water companies and 5.1% for both the three Value Line (Std. Ed.) water companies and the fifteen utilities as shown on Line No. 5 on page 1 of Aqua Schedule 3.15. The total market equity risk premium utilized was 6.5% and is based upon an average of the long-term historical and projected market risk premia.

The basis of the projected median market equity risk premium is explained in detail in Note 1 on page 4 of Aqua Schedule 3.15. As previously discussed, it is derived from an average of the most recent 3-month (using the months of September 2004 through November 2004) and a recent spot (December 3, 2004) 3 - 5 year median total market price appreciation projections from Value Line, and the long-term historical average from Ibbotson Associates. The appreciation projections by Value Line plus average dividend yield equate to a forecasted annual total return rate on the market of 11.2%. The long-term historical return rate of 12.4% on the market as a whole is from Ibbotson Associates' Stocks, Bonds, Bills and Inflation - Valuation Edition 2004 Yearbook. In each instance, the relevant risk-free rate was deducted from the total market return rate. For example, from the Value Line projected total market return of 11.2%, the forecasted average risk-free rate of 5.4% was deducted indicating a forecasted market risk premium of 5.8%. From the Ibbotson Associates' long-term historical total return rate of 12.4%, the long-term historical income return

rate on long-term U.S. Government Securities of 5.2% was deducted indicating an historical equity risk premium of 7.2%. Thus, the average of the projected and historical total market risk premia of 5.8% and 7.2%, respectively, is 6.5%.

Q What are the results of your applications of the traditional and empirical CAPM to the proxy groups?

A. As shown on Aqua Schedule 3.15, Line No. 3 of page 1, the traditional CAPM cost rate is 9.7% for the proxy group of six C.A. Turner water companies and 10.1% for both the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance. And, as shown on Line No. 6 of page 1, the empirical CAPM cost rate is 10.2% for the six water companies and 10.5% for both the three Value Line (Std. Ed.) water companies and the fifteen utilities. The traditional and empirical CAPM cost rates are shown individually by company on pages 2 and 3 of Aqua Schedule 3.15. As shown on Line No. 7, the CAPM cost rate applicable to the proxy group of six C.A. Turner water companies is 10.0%, 10.3% applicable to the proxy group of three Value Line (Std. Ed.) water companies, and 10.3% applicable to the proxy group of fifteen utilities based upon the traditional and empirical CAPM results.

Q. Some critics of the ECAPM model claim that using adjusted betas in a traditional CAPM amounts to using an ECAPM. Is such a claim valid?

A. No. Frank J. Hanley, President, AUS Consultants - Utility Services and a colleague of mine, has been in communication with Dr. Roger A. Morin of Georgia State University and the author of Regulatory Finance – Utilities' Cost of

Capital (1994, Public Utility Reports, Inc., Arlington, VA). Via e-mail, Dr. Morin has indicated that the ECAPM compensates for CAPM's inherent bias by ascribing a higher intercept and flatter slope to CAPM. It is not an attempt to increase beta. In his e-mail of August 31, 2000, Dr. Morin states:

> There are two distinct separate issues involved when implementing the CAPM. First, given the validity of the standard CAPM, what is the best proxy for expected beta? Second, and more fundamentally, does the standard form of the CAPM provide the best explanation of the risk-return relationship observed on capital markets?

Regarding the standard, or traditional, CAPM, Dr. Morin also states:

> There have been countless empirical tests of the CAPM to determine to what extent security returns and betas are related in the manner predicted by the CAPM. The results of the tests support the idea that beta is related to security returns, that the risk-return tradeoff is positive, and that the relationship is linear. The contradictory finding is that the risk-return tradeoff is not as steeply sloped as the predicted CAPM. That is, low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. This is one of the most well-know results in finance. A CAPM-based estimate of cost of capital underestimates the return required from low-beta securities and overstates the return from high-beta securities, based on the empirical evidence. The empirical form of the CAPM refines the standard form of the CAPM to account for this phenomenon.
>
> Thus, I do not share the view that the ECAPM is equivalent to a beta adjustment. For utility stocks with betas less than one, the CAPM understates the return. The ECAPM allows for the CAPM's inherent bias by ascribing a higher intercept and flatter slope to the CAPM. The ECAPM is a return (Y-axis, vertical axis) adjustment. It is not a beta risk (X-axis, horizontal) adjustment. The ECAPM is not an attempt to increase the beta estimate, which would be a horizontal x-axis adjustment. The ECAPM is a return adjustment rather than a risk adjustment. (emphasis added.)

Dr. Morin also indicates in his correspondence with Mr. Hanley that there "is a huge financial literature which supports both the use of the ECAPM and the use of adjusted betas."

Moreover, regulatory support for the ECAPM can be found in the New York Public Service Commission's Generic Financing Docket, Case 91-M-0509. In addition, the Regulatory Commission of Alaska (RCA) in its Order No. 151 in Docket No. P-97-4 re: In the Matter of the Correct Calculation and Use of Acceptable Input Data to Calculate the 1997, 1998, 1999, 2000, 2001 and 2002 Tariff Rates for the Intrastate Transportation of Petroleum over the TransAlaska Pipeline System notice:

> Although we primarily rely upon Tesoro's recommendation, we are concerned, however, about Tesoro's CAPM analysis. Tesoro averaged the results it obtained from CAPM and ECAPM while at the same time providing empirical testimony[604] that the ECAPM results are more accurate then [sic] traditional CAPM results. The reasonable investor would be aware of these empirical results. Therefore, we adjust Tesoro's recommendation to reflect only the ECAPM result.

Moreover, the slope of the Security Market Line (SML) should not be confused with beta. As Eugene F. Brigham, finance professor emeritus and the author of many financial textbooks states[30] :

> The slope of the SML reflects the degree of risk aversion in the economy – the greater the average investor's aversion to risk, then (1) the steeper is the slope of the line, (2) the greater is the risk premium for any risky asset, and (3) the higher is the required rate of return on risky assets.[12]
>
> [12]Students sometimes confuse beta with the slope of the SML. This is a mistake. As we saw earlier in connection with Figure 6-8, and as is developed further in Appendix 6A, beta does represent the slope of a line, but *not* the Security Market Line. This confusion arises partly because the SML equation is generally written, in this book and throughout the finance literature, as $k_i = R_F + b_i(k_M - R_F)$, and in this form b_i looks like the slope coefficient and $(k_M - R_F)$ the variable. It would perhaps be less confusing if the second term were written $(k_M - R_F)b_i$, but this is not generally done.

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30 Eugene F. Brigham, Financial Management – Theory and Practice, 4th Ed., The Dryden Press, 1985, p. 203.

In view of the foregoing, using adjusted betas in an ECAPM analysis is not incorrect, nor inconsistent with the financial literature. Rather, the use of the traditional CAPM results in an understated estimate of the cost of common equity capital for a utility with an adjusted beta below 1.00. And notwithstanding regulatory support for the use of only the ECAPM, my CAPM analysis, which includes both the traditional CAPM and the ECAPM, is a conservative approach resulting in a reasonable estimate of the cost of common equity

E. Comparable Earnings Model (CEM)

1. Theoretical Basis

Q. Please describe your application of the Comparable Earnings Model and how it is used to determine common equity cost rate.

A. My application of the CEM is summarized on Aqua Schedule 3.16 which consists of eight pages. Pages 1 and 2 show the CEM results for the proxy group of six C.A. Turner water companies, pages 3 and 4 show the CEM result for the proxy group of three Value Line (Std. Ed.) water companies, and pages 5 and 6 show the CEM results for the proxy group of fifteen utilities selected on the basis of least relative distance. Pages 7 and 8 contain notes related to pages 1 through 6.

The comparable earnings approach is derived from the "corresponding risk" standard of the landmark cases of the U.S. Supreme Court. Therefore, it is consistent with the Hope doctrine that the return to the equity investor should be commensurate with returns on investments in other firms having corresponding risks.

The CEM is based upon the fundamental economic concept of

opportunity cost 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. The opportunity cost 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, in this case net worth, of similar risk enterprises. Thus, it provides a direct measure of return, since it translates into practice the competitive principle upon which regulation rests. In my opinion, it is inappropriate to use the achieved returns of regulated utilities of similar risk because to do so would be circular and inconsistent with the principle of equality of risk with non-price regulated firms.

The difficulty in application of the CEM is to select a proxy group of companies which are similar in risk, but are not price regulated utilities. Consequently, the first step in determining a cost of common equity using the comparable earnings model is to choose an appropriate proxy group of non-price regulated firms. The proxy group should be broad-based in order to obviate any company-specific aberrations. As stated previously, utilities need to be eliminated to avoid circularity since the returns on book common equity of utilities are substantially influenced by regulatory awards and are therefore not representative of the returns that could be earned in a truly competitive market.

2. Application of the CEM

Q. Please describe your application of the CEM.

A. My application of the CEM is market-based in that the selection of non-price regulated firms of comparable risk is based upon statistics derived from the

market prices paid by investors.

I have chosen three proxy groups of domestic, non-price regulated firms to reflect both the systematic and unsystematic risks of the proxy group of six C.A. Turner water companies, the proxy group of three Value Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected on the basis of least relative distance, respectively. The proxy group of seventy-nine non-utility companies similar in risk to the proxy group of six C.A. Turner water companies, of ninety-seven non-utility companies similar in risk to the proxy group of three Value Line (Std. Ed.) water companies and seventy-one non-utility companies similar in risk to the proxy group of fifteen utilities selected on the basis of least relative distance are listed on pages 1 through 6, Aqua Schedule 3.16. The criteria used in the selection of these proxy companies were that they be domestic non-utility companies and have a meaningful rate of return on net worth, common equity or partners' capital reported in Value Line (Standard Edition) for each of the five years ended 2003, or projected for 2007-2009. Value Line betas were used as a measure of systematic risk. The standard error of the regression was used as a measure of each firm's specific, i.e., unsystematic risk. The standard error of the regression reflects the extent to which events specific to a company's operations will affect its stock price and, therefore, is a measure of diversifiable, unsystematic, company-specific risk. *In essence, companies which have similar betas and standard errors of the regressions, have similar investment risk, i.e., the sum of systematic (market) risk as reflected by beta and unsystematic (business and financial) risk, as reflected by the standard error of the regression, respectively. Those statistics are derived from regression analyses using market prices which, under the EMH reflect all relevant risks. The application of these criteria results in proxy groups of non-price regulated firms similar in risk to the average company in each proxy group.*

Using a Value Line, Inc. database dated September 16, 2004, the proxy group of seventy-nine non-price regulated companies were chosen based upon ranges of unadjusted beta and standard error of the regression. The ranges were based upon the average standard deviations of the unadjusted beta and the average standard error of the regression for the proxy group of six C.A. Turner water companies.

The six C.A. Turner water companies in the proxy group have an average unadjusted beta of 0.45 whose standard deviation is 0.1014 as of September 16, 2004, as shown on page 2, Aqua Schedule 3.16. The average standard error of the regression is 3.7805 as also shown on Aqua Schedule 3.14, page 2 with a standard deviation of 0.1661 as derived in Note 5, page 7 of Aqua Schedule 3.16. Ranges of unadjusted betas from 0.15 to 0.75 and of standard errors of the regression from 3.2822 to 4.2788 were used to select the proxy group of seventy-nine domestic non-utility companies comparable to the profile of the proxy group of six C.A. Turner water companies as can be gleaned from pages 1 and 2 and explained in Note 1 on page 4 of Aqua Schedule 3.16. These ranges are based upon the proxy group's average unadjusted beta of 0.45 and average standard error of the regression of 3.7805 plus or minus three standard deviations of beta (0.1014 x 3 = 0.3042) and standard error of the regressions (0.1661 x 3 = 0.4983). The use of three standard deviations assures capturing 99.73% of the distribution of unadjusted betas and standard errors, assuring comparability.

Likewise, using the same Value Line, Inc. database dated September 16, 2004, the proxy group of ninety-seven non-price regulated companies were chosen based upon ranges of unadjusted beta and standard error of the regression. The ranges were based upon the average standard deviations of the unadjusted beta and the average standard error of the regression for the proxy group of three Value Line (Std. Ed.) water companies.

The three Value Line (Std. Ed.) water companies in the proxy group have an average unadjusted beta of 0.54 whose standard deviation is 0.0940 as of September 16, 2004, as shown on page 4, Aqua Schedule 3.16. The average standard error of the regression is 3.6320 as also shown on Aqua Schedule 3.16, page 4 with a standard deviation of 0.1596 as derived in Note 10, page 8 of Aqua Schedule 3.16. Ranges of unadjusted betas from 0.26 to 0.82 and of standard errors of the regression from 3.1532 to 4.1108 were used to select the proxy group of ninety-seven domestic non-utility companies comparable to the profile of the proxy group of three Value Line (Std. Ed.) water companies as can be gleaned from pages 3 and 4 and explained in Note 9 on pages 7 and 8 of Aqua Schedule 3.16. These ranges are based upon the proxy group's average unadjusted beta of 0.54 and average standard error of the regression of 3.6320 plus or minus three standard deviations of beta (0.0940 x 3 – 0.2820) and standard error of the regressions (0.1596 x 3 = 0.4788). The use of three standard deviations assures capturing 99.73% of the distribution of unadjusted betas and standard errors, assuring comparability.

In addition, using the same Value Line, Inc. database dated September 16, 2004, the proxy group of seventy-one non-price regulated companies were chosen based upon ranges of unadjusted beta and standard error of the regression. The ranges were based upon the average standard deviations of the unadjusted beta and the average standard error of the regression for the proxy group of fifteen utilities selected on the basis of least relative distance.

The fifteen utilities in the proxy group have an average unadjusted beta of 0.53 whose standard deviation is 0.0861 as of September 16, 2004, as shown on page 6 of Aqua Schedule 3.16. The average standard error of the regression is 3.2953 as also shown on Aqua Schedule 3.16, page 8 with a standard deviation of 0.1448 as derived in Note 12, page 8 of Aqua Schedule 3.16. Ranges of

unadjusted betas from 0.27 to 0.79 and of standard errors of the regression from 2.8609 to 3.7297 were used to select the proxy group of seventy-one domestic non-utility companies comparable to the profile of the proxy group of fifteen utilities selected on the basis of least relative distance as can be gleaned from pages 5 and 6 and explained in Note 11 on page 8 of Aqua Schedule 3.16. These ranges are based upon the proxy group's average unadjusted beta of 0.53 and average standard error of the regression of 3.2953 plus or minus three standard deviations of beta (0.0861 x 3 = 0.2583) and standard error of the regressions (0.1448 x 3 = 0.4344). The use of three standard deviations assures capturing 99.73% of the distribution of unadjusted betas and standard errors, assuring comparability.

I believe that this methodology for selecting non-price regulated firms of similar total risk (i.e., non-diversifiable systematic and diversifiable non-systematic risk) is meaningful and effectively responds to the criticisms normally associated with the selection of firms presumed to be comparable in total risk. This is because the selection of non-price regulated companies comparable in total risk is based upon regression analyses of market prices which reflect investors' assessment of all risks, diversifiable and non-diversifiable. Thus, the empirical selection process results in companies comparable in both systematic and unsystematic risks, i.e., total risk.

Once proxy groups of non-price regulated companies are selected, it is then necessary to derive returns on book common equity, net worth or partners' capital for the companies in the groups. I have measured these returns using the rate of return on net worth, common equity or partners' capital reported by Value Line (Standard Edition). It is reasonable to measure these returns over both the most recent historical five-year period as well as those projected over the ensuing five-year period.

Q. What are your conclusions of CEM cost rate?

A. Conclusions of CEM cost rates are 16.5% for the proxy group of six C.A. Turner water companies as shown on page 2 of Aqua Schedule 3.16, 16.1% for the proxy group of three Value Line (Std. Ed.) water companies as shown on page 1, and 15.4% for the proxy group of fifteen utilities selected on the basis of least relative distance as shown on page 6. Note that I have applied a test of significance (Student's t-statistic) to determine whether any of the historical or projected returns are significantly different from their respective means at the 95% confidence level. As a result, the historical and the projected means of several companies have been excluded.

I have also eliminated from the groups of non-price regulated companies, all those rates of return which are greater than 20.0% or less than 200 basis points above the current prospective yield of 6.6% on Moody's A rated public utility bonds (see page 1 of Aqua Schedule 3.14), or 8.6% for reasons discussed previously. Such an elimination results in an arithmetic mean return rate of 14.8% on an historical five-year and 13.6% on a projected five-year basis for the six C.A. Turner water companies, 14.4% on an historical five-year basis and 13.5% on a projected five-year basis for the three Value Line (Std. Ed.) water companies, and 14.1% on an historical five-year basis and 13.5% on a projected five-year basis for the fifteen utilities as shown on pages 2, 4 and 6 of Aqua Schedule 3.16, respectively. I rely upon the midpoint of the arithmetic mean historical five-year and projected five-year rates of return of 14.2, 14.0% and 13.8% as my CEM conclusions for each proxy group, respectively.

IX. RECOMMENDED COMMON EQUITY COST RATE

Q. What is your recommended common equity cost rate?

A. It is 11.30%, based upon a range of common equity cost rates of 11.10% to 11.50% after investment risk adjustment based upon the common equity cost rates resulting from all four cost of common equity models consistent with the EMH which logically mandates the use of multiple cost of common equity models.

In formulating my recommended common equity cost rate of 11.30%, I reviewed the results of the application of four different cost of common equity models, namely, the DCF, RPM, CAPM, and CEM for the three proxy groups. I employ all four cost of common equity models as primary tools in arriving at my recommended common equity cost rate because no single model is so inherently precise that it can be relied upon solely, to the exclusion of other theoretically sound models. As discussed above, all four models are based upon the Efficient Market Hypothesis (EMH), and therefore, have application problems associated with them. The EMH, as also previously discussed, requires the assumption that investors rely upon multiple cost of common equity models. Moreover, as demonstrated in this testimony, the prudence of using multiple cost of common equity models is supported in the financial literature. Therefore, none should be relied upon exclusively to estimate investors' required rate of return on common equity.

In a market environment where market value deviates significantly from book value (lower or higher), sole reliance on the DCF model is problematic for a regulated utility because its application results in an overstatement or understatement, respectively, of investors' required rate of return. Investors expect to achieve their required rate of return based upon dividends received and appreciation in market price. This testimony has shown that market prices

are significantly influenced by factors other than earnings per share (EPS) and dividends per share (DPS). Thus, because it is necessary to use accounting proxies for growth in the DCF model (such as EPS, DPS, or their derivative, internal growth), that model does not reflect the full extent of market price growth expected by investors. Market prices reflect other factors affecting growth not accounted for in the standard regulatory version of the DCF model such as an increase in the market value per share due to expected increases in price/earnings multiples and less obvious factors included in the long-range goals of investors. For these reasons, sole reliance on the DCF model should be avoided. In fact, as discussed in detail above, state commissions in Iowa, Indiana, Hawaii and Pennsylvania, which have previously relied primarily upon the DCF, have explicitly recognized this tendency of the DCF model to understate the common equity cost rate when, as now, market prices significantly exceed book values.

The results of the four cost of common equity models applied to the proxy groups of six C.A. Turner water companies, three Value Line (Std. Ed.) water companies, and fifteen utilities selected on the basis of least relative distance are shown on Aqua Schedule 3.1, page 2 and summarized below:

Table 4

	Proxy Group of Six C.A. Turner Water Cos.	Proxy Group of Three Value Line (Std. Ed.) Water Cos.	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Discounted Cash Flow Model	10.6%	11.0%	10.8%
Risk Premium Model	10.6	10.8	10.9
Capital Asset Pricing Model	10.0	10.3	10.3
Comparable Earnings Model	14.2	14.0	13.8
Indicated Common Equity Cost Rate Before Investment Risk Adjustment	10.80%	11.00%	11.00%
Investment Risk Adjustment	0.30	0.30	0.50
Common Equity Cost Rate After Adjustment for Investment Risk	11.10%	11.30%	11.50%
Recommended Common Equity Cost Rate		11.30%	

Based upon these common equity cost rate results, I conclude that a common equity cost rate of 10.80% is indicated for the proxy group of six C.A. Turner water companies, of 11.00% for the proxy group of three Value Line (Std. Ed.) water companies, and of 11.00% for the proxy group of fifteen utilities selected on the basis of least relative distance based upon the use of multiple common equity cost rate models and before any adjustment for Aqua IL - Woodhaven's greater relative investment risk as shown on Line No. 5, page 2 of Aqua Schedule 3.1.

However, as discussed previously, Aqua IL - Woodhaven has greater investment risk than the average proxy group company because of its small size vis-à-vis each proxy group, whether measured by book capitalization or the market capitalization of common equity (estimated market value for Aqua IL - Woodhaven, whose common stock is not traded) and because of its lower bond rating equivalent. In addition, as indicated in Company Witness Thomas J.

Burosky's direct testimony, the Company is experiencing a significant level of capital expenditure requirements. Therefore, it is necessary to upwardly adjust the 10.80% and 11.00% indicated common equity cost rates based upon each proxy group, respectively.

Based upon Aqua IL - Woodhaven's small relative size, an adjustment to reflect Aqua IL - Woodhaven's smaller relative size of 2.71% (271 basis points) relative to the indicated common equity cost rate of the six C.A. Turner water companies, 3.03% (303 basis points) relative to the indicated common equity cost rate of the three Value Line (Std. Ed.) water companies, and 5.75% (575 basis points) relative to the fifteen utilities are indicated. These adjustments are based upon data contained in Chapter 7 entitled "Firm Size and Return" from Ibbotson Associates' Stocks, Bonds, Bills and Inflation-Valuation Edition 2004 Yearbook. The determinations are based on the size premia for decile portfolios of New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and NASDAQ listed companies for the 1926-2003 period and related data shown on pages 3 through 18 of Aqua Schedule 3.1. The average size premia for the deciles in which the proxy groups fall have been compared to the average size premia for the 9th and 10th/10th decile between/in which Aqua IL - Woodhaven would fall if its stock were traded and sold at the December 7, 2004 average market/book ratio of either 233.6%, 225.7% or 188.7% experienced by each proxy group, respectively. As shown on page 3 of Aqua Schedule 3.1, the size premium spread between Aqua IL - Woodhaven and the six water companies is 2.71%, between Aqua IL, 3.03% between the three Value Line (Std. Ed.) water

companies and Aqua IL and 5.75% between Aqua IL - Woodhaven and the fifteen utilities. Page 4 contains notes relative to page 3. Page 5 contains data in support of page 3 while pages 6 through 18 of Aqua Schedule 1 contain relevant information from the Ibbotson Associates' Valuation Edition 2004 Yearbook discussed previously.

In addition, based upon Aqua IL - Woodhaven's NAIC 2 rating which is the equivalent of Moody's Baa bond rating category as previously discussed, adjustments of 0.28% (28 basis points) relative to the indicated common equity cost rate of the six C. A. Turner water companies, three Value Line (Std. Ed.) water companies, and 0.19% (19 basis points) relative to the fifteen utilities are indicated. These adjustments are based upon the average yield spread between Moody's Baa rated public utility bonds and Moody's A2 and A3 public utility bonds, the average bond ratings of the six water companies (A2), the three Value Line (Std. Ed.) water companies (A2), and fifteen utilities (A3), respectively, as shown on page 2 of Aqua Schedule 3.14. The average yield spread between Moody's Baa rated and A rated public utility bonds is 0.28% (28 basis points), and 0.19%[31] (19 basis points) between Moody's A3 and Baa rated public utility bonds as shown on/or can be gleaned from page 4 of Aqua Schedule 3.14. Thus, to reflect Aqua IL - Woodhaven's lower credit rating, the adjustments to the indicated common equity cost rate of the proxy group of six C. A. Turner water companies and three Value Line (Std. Ed.) water companies is 0.28%, or the average yield spread between Moody's Baa and A rated public utility bonds.

[31] One-third of the average yield spread of Baa over A rated public utility bonds of 0.28% (1/3 x 0.28% = 0.19%).

Since the average Moody's bond rating of the proxy group of fifteen utilities is A3, the adjustment to its indicated common equity cost rate is equal to one-third the average yield spread between the average yield on Moody's Baa and A rated public utility bonds of 0.28%, or 0.19% (0.19% = 1/3 * 0.28%).

Consequently, total investment risk adjustments of 2.99% (2.99% = 2.71% + 0.28%), 3.31% (3.31% = 3.03% + 0.28%) and 5.94% (5.94% = 5.75% + 0.19%) are indicated for the six water companies, three Value Line (Std. Ed.) water companies, and the fifteen utilities, respectively. However, I will make conservatively reasonable investment risk adjustments of 0.30% (30 basis points) to the indicated common equity cost rates of 10.80% and 11.00% for the six water companies and the three Value Line (Std. Ed.) water companies, respectively, and 0.50% (50 basis points) to the indicated common equity cost rates of 11.00% for the fifteen utilities.

Therefore, as shown on page 2 of Aqua Schedule 3.1 at Line No. 7 and Table 4 above, the indicated common equity cost rates based on each proxy group, including the business adjustment based upon Aqua IL - Woodhaven's small size are 11.10%, 11.30%, and 11.50%. My recommended common equity cost rate of 11.30% is based upon the average of these cost rates. In my opinion, such a cost rate is both reasonable and conservative.

Q. Does that conclude your direct testimony?

A. Yes.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT

AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL QUALIFICATIONS
OF
PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL EXPERIENCE

1996-Present

As a Vice President, I continue to prepare fair rate of return and cost of capital exhibits, as well as submitting testimony on same before state public utility commissions. I continue to provide assistance and support throughout the entire ratemaking litigation process.

As the Publisher of C.A. Turner Utility Reports, I am responsible for the production, publishing, and distribution of the reports. C.A. Turner Utility Reports provides financial data and related ratios for about 200 public utilities, i.e., electric, combination gas and electric, natural gas distribution, natural gas transmission, telephone, and water utilities, on a monthly, quarterly and annual basis. C.A. Turner Utility Reports has about 1,000 subscribers including utilities, many state regulatory commissions, federal agencies, individuals, brokerage firms, attorneys, as well as public and academic libraries. The publication has continuously provided financial statistics on the utility industry since 1930.

As the Publisher of C.A. Turner Utility Reports, I supervise the production, publishing, and distribution of the AGA Rate Service publications under license from the American Gas Association. I am also responsible for maintaining and calculating the performance of the AGA Index, a market capitalization weighted index of the common stocks of the approximately 90 corporate members of the AGA. In addition, I supervise the production of a quarterly survey of investor-owned water company rate case activity on behalf of the National Association of Water Companies.

1994-1996

As an Assistant Vice President, I prepared fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. These supporting exhibits include the determination of an appropriate ratemaking capital structure and the development of embedded cost rates of senior capital. The exhibits also support the determination of a recommended return on common equity through the use of various market models, such as, but not limited to, Discounted Cash Flow analysis, Capital Asset Pricing Model and Risk Premium Methodology, as well as an assessment of the risk characteristics of the client utility. I also assisted in the preparation of responses to any interrogatories received regarding such testimonies filed on behalf of client utilities. Following the filing of fair rate of return testimonies, I assisted in the evaluation of opposition testimony in order to prepare interrogatory questions, areas of cross-examination, and rebuttal testimony. I also evaluated and assisted in the preparation of briefs and exceptions following the hearing process. I have submitted testimony before state public utility commissions regarding appropriate capital structure ratios and fixed capital cost rates.

1990-1994

As a Senior Financial Analyst, I supervised two analysts in the preparation of fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. The team also assisted in the preparation of interrogatory responses.

I evaluated the final orders and decisions of various commissions to determine whether further actions are warranted and to gain insight which may assist in the preparation of future rate of return studies.

I assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

I co-authored an article with Frank J. Hanley entitled "Comparable Earnings: New Life for an Old Precept" which was published in the American Gas Association's Financial Quarterly Review, Summer 1994.

I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts (now the Society of Utility and Regulatory Financial Analysts (SURFA)). This designation is based upon education, experience and the successful completion of a comprehensive examination.

As Administrator of Financial Analysis for C. A. Turner Utility Reports, which reports financial data for over 200 utility companies and has approximately 1,000 subscribers, I oversee the preparation of this monthly publication, as well as the annual publication, Financial Statistics - Public Utilities.

1988-1990

As a Financial Analyst, I assisted in the preparation of fair rate of return studies including capital structure determination, development of senior capital cost rates, as well as the determination of an appropriate rate of return on equity. I also assisted in the preparation of interrogatory responses, interrogatory questions of the opposition, areas of cross-examination and rebuttal testimony. I also assisted in the preparation of the annual publication C.A. Turner Utility Reports - Financial Statistics - Public Utilities.

1973-1975

As a research assistant in the Research Department of the Regional Economics Division of the Federal Reserve Bank of Boston, I was involved in the development and maintenance of econometric models to simulate regional economic conditions in New England in order to study the effects of, among other things, the energy crisis of the early 1970's and property tax revaluations on the economy of New England. I was also involved in the statistical analysis and preparation of articles for the New England Economic Review. Also, I acted as assistant editor for New England Business Indicators.

1972

As a research assistant in the Office of the Assistant Secretary for International Affairs, U.S. Treasury Department, Washington, D.C., I developed and maintained econometric models which simulated the economy of the United States in order to study the results of various alternate foreign trade policies so that national trade policy could be formulated and recommended.

I am also a member of the Society of Utility and Regulatory Financial Analysts (formerly the National Society of Rate of Return Analysts).

Clients Served

I have offered expert testimony before the following commissions:

Arkansas
California
Delaware
Florida
Hawaii
Idaho
Illinois
Indiana
Maine
Maryland
Michigan
Missouri
New Jersey
New York
North Carolina
Ohio
Pennsylvania
South Carolina
Virginia
Washington

I have sponsored testimony on the rate of return and capital structure effects of merger and acquisition issues for:

California-American Water Company
New Jersey-American Water Company

I have sponsored testimony on fair rate of return and related issues for:

Aqua Illinois, Inc.
Audubon Water Company
Carolina Pines Utilities, Inc.
Carolina Water Service, Inc.
Consumers Illinois Water Company
Consumers Maine Water Company
Consumers New Jersey Water Company
Elizabethtown Water Company
Emporium Water Company
GTE Hawaiian Telephone Inc.
Greenridge Utilities, Inc.
Long Neck Water Company
Middlesex Water Company
Missouri-American Water Company
Mt. Holly Water Company
Nero Utility Services, Inc.
New Jersey-American Water Company
Ohio-American Water Company
Pinelands Waste Water Company
Pittsburgh Thermal
Sussex Shores Water Company
Thames Water Americas
Tidewater Utilities, Inc.
Transylvania Utilities, Inc.
Twin Lakes Utilities, Inc.
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Rochelle, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Utilities, Inc. of Florida
Valley Energy, Inc.
Wellsboro Electric Company
Western Utilities, Inc.

I have sponsored testimony on capital structure and senior capital cost rates for the following clients:

Alpena Power Company
Arkansas-Western Gas Company
Associated Natural Gas Company
PG Energy Inc.
United Water Delaware, Inc.
Washington Natural Gas Company

I have assisted in the preparation of rate of return studies on behalf of the following clients:

Algonquin Gas Transmission Company
Arkansas-Louisiana Gas Company
Arkansas Western Gas Company
Artesian Water Company
Associated Natural Gas Company
Atlantic City Electric Company
Bridgeport-Hydraulic Company
Cambridge Electric Light Company
Carolina Power & Light Company
Citizens Gas and Coke Utility
City of Vernon, CA
Columbia Gas/Gulf Transmission Cos.
Commonwealth Electric Company
Commonwealth Telephone Company
Conestoga Telephone & Telegraph Co.
Connecticut Natural Gas Corporation
Consolidated Gas Transmission Company
Consumers Power Company
CWS Systems, Inc.
Delmarva Power & Light Company
East Honolulu Community Services, Inc.
Equitable Gas Company

Rate of Return Study Clients, Continued

Equitrans, Inc.
Florida Power & Light Company
Gary Hobart Water Company
Gasco, Inc.
GTE Arkansas, Inc.
GTE California, Inc.
GTE Florida, Inc.
GTE Hawaiian Telephone
GTE North, Inc.
GTE Northwest, Inc.
GTE Southwest, Inc.
Great Lakes Gas Transmission L.P.
Hawaiian Electric Company
Hawaiian Electric Light Company
IES Utilities Inc.
Illinois Power Company
Interstate Power Company
Iowa Electric Light and Power Company
Iowa Southern Utilities Company
Kentucky-West Virginia Gas Company
Lockhart Power Company
Middlesex Water Company
Milwaukee Metropolitan Sewer District
Mountaineer Gas Company
National Fuel Gas Distribution Corp.
National Fuel Gas Supply Corp.
Newco Waste Systems of NJ, Inc.
New Jersey-American Water Company
New Jersey Natural Gas Company
New York-American Water Company
North Carolina Natural Gas Corp.
Northumbrian Water Company
Ohio-American Water Company
Oklahoma Natural Gas Company
Orange and Rockland Utilities
Paiute Pipeline Company
PECO Energy Company
Penn-York Energy Corporation
Pennsylvania-American Water Co.
PG Energy Inc.
Philadelphia Electric Company
South Carolina Pipeline Company
Southwest Gas Corporation
Stamford Water Company
Tesoro Alaska Petroleum Company
United Telephone of New Jersey
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Jersey, Inc.
United Water New York, Inc.
United Water Pennsylvania, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Vista-United Telecommunications Corp.
Washington Natural Gas Company
Washington Water Power Corporation
Waste Management of New Jersey – Transfer Station A
Wellsboro Electric Company
Western Reserve Telephone Company
Western Utilities, Inc.

EDUCATION:

1973 – Clark University – B.A. – Honors in Economics
1991 – Rutgers University – M.B.A. – High Honors

PROFESSIONAL AFFILIATIONS:

Society of Utility and Regulatory Financial Analysts (serve as Secretary/Treasurer from 2004-2006)
Energy Association of Pennsylvania
National Association of Water Companies – Member of the Finance Committee

AQUA SEWER EXHIBIT NO. 3.0

AQUA ILLINOIS, INC. – WOODHAVEN LAKES SEWER DIVISION

EXHIBIT

TO ACCOMPANY THE

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS - UTILITY SERVICES

CONCERNING

COMMON EQUITY COST RATE

DECEMBER 2004

Aqua Illinois, Inc. – Woodhaven Lakes Sewer Division
Table of Contents
to Aqua Sewer Exhibit No. 3.0
of Pauline M. Ahern

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Summary of Cost of Capital and Fair Rate of Return
Based upon an Average Capital Structure Estimated for the Test Year Ended December 31, 2005

Type of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	47.90 %	7.19 % (1)	3.446 % (1)
Short-Term Debt	0.38	3.07 (1)	0.012 (1)
Total Debt	48.28		3.458
Preferred Stock	0.32	5.48 (1)	0.018 (1)
Common Equity	51.39	11.30 (2)	5.807
Total	99.99 % (3)		9.283 %

Notes:

(1) From Schedule D -1, page 1.

(2) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2 of this Schedule.

(3) Does not add due to rounding.

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Brief Summary of Common Equity Cost Rate

No.	Principal Methods	Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
1.	Discounted Cash Flow Model (DCF) (1)	10.6 %	11.0 %	10.8 %
2.	Risk Premium Model (RPM) (2)	10.6	10.8	10.9
3.	Capital Asset Pricing Model (CAPM) (3)	10.0	10.3	10.3
4.	Comparable Earnings Model (CEM) (4)	14.2	14.0	13.8
5.	Indicated Common Equity Cost Rate before Adjustment for Investment Risk	10.80 %	11.00 %	11.00 %
6.	Investment Risk Adjustment (5)	0.30	0.30	0.50
7.	Indicated Common Equity Cost Rate after Adjustment for Investment Risk	11.10 %	11.30 %	11.50 %
8.	Average		11.30%	
9.	Recommendation		11.30%	

Notes: (1) From Aqua Schedule 3.8.
(2) From page 1 of Aqua Schedule 3.14.
(3) From page Aqua Schedule 3.15.
(4) From page 2, 4 and 6 of Aqua Schedule 3.16.
(5) Investment risk adjustment to reflect Aqua IL's greater investment risk due to its small size and lower credit rating vis-à-vis each proxy group as detailed in Ms. Ahern's direct testimony.

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		1 Total Capitalization (incl. Short-Term Debt) for the Year 2003 (millions)	(times larger)	2 Market Capitalization on December 7, 2004 (1) (millions)	(times larger)	3 Applicable Decile of the NYSE/AMEX/ NASDAQ	4 Applicable Size Premium		5 Spread from Applicable Size Premium (2)
1.	Aqua Illinois, Inc.	$ 112.954 (3)							
A.	Based upon the Proxy Group of Six C. A. Turner Water Companies			$ 136.749		9 - 10 (4)	4.62%	(5)	
B.	Based upon the Proxy Group of Three Value Line (Standard Edition) Water Companies			$ 132.125		9 - 10 (4)	4.62%	(5)	
C.	Based upon the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			$ 110.465		10 (4)	6.34%	(6)	
2.	Proxy Group of Six C. A. Turner Water Companies	$ 502.690 (7)	4.5 x	$ 605.425	4.4 x	7 - 8 (8)	1.91%	(9)	2.71%
3.	Proxy Group of Three Value Line (Standard Edition) Water Companies	$ 865.130 (10)	7.7	$ 1,054.633	8.0	6 (11)	1.59%	(12)	3.03%
4.	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	$ 6,719.260 (13)	59.5	$ 5,517.271	49.9	2 - 3 (14)	0.59%	(15)	5.75%

Decile	Number of Companies	Recent Total Market Capitalization (millions)	Recent Average Market (millions)
1 - Largest	168	$7,419,638.030	$44,164.512
2	186	1,471,629.952	7,911.989
3	198	746,716.927	3,771.298
4	200	451,145.013	2,255.725
5	221	337,041.577	1,525.075
6	277	290,452.647	1,048.566
7	343	238,327.258	694.832
8	379	171,437.318	452.341
9	613	168,889.652	275.513
10 - Smallest	1724	136,028.242	78.903

See page 4 for notes.

Aqua Illinois, Inc. – Woodhaven Lakes Sewer Division
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE

Notes:

(1) From page 5 of this Schedule.

(2) Line No. 1 – Line No. 2 and Line No. 1 – Line No. 3 of Columns 3 and 4, respectively. For example, the 2.71% in Column 5, Line No. 2 is derived as follows 2.71% = 4.62% - 1.91%.

(3) From page 1 of Aqua Schedule 3.3.

(4) With an estimated market capitalization of $136.749 million (based upon the proxy group of six C. A. Turner water companies), $132.125 (based upon the proxy group of three Value Line (Standard Edition) water companies), $110.465 (based upon the proxy group of fifteen utilities selected on the basis of least relative distance), Aqua Illinois, Inc. falls between the 9th and 10th deciles or in the 10th decile of the NYSE/AMEX/NASDAQ which have average market capitalizations of $177.208 million and $78.903 as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule

(5) *Average size premium* applicable to the 9th and 10th deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(6) Size premium applicable to the 10th decile of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(7) From page 1 of Aqua Schedule 3.4.

(8) With an estimated market capitalization of $605.425 million, the proxy group of six C. A. Turner water companies falls between the 7th and 8th deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of $573.587 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule.

(9) Average size premium applicable to the 7th and 8th deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(10) From page 1 of Aqua Schedule 3.5.

(11) With an estimated market capitalization of $1,054.633 million, the proxy group of three Value Line (Standard Edition) water companies falls in the 6th decile of the NYSE/AMEX/NASDAQ which has an average market capitalization of $1,048.566 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule.

(12) Size premium applicable to the 6th decile of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(13) With an estimated market capitalization of $5,517.271 million, the proxy group fifteen utilities selected on the basis of least relative distance falls between the 2nd and 3rd deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of $5,841.644 million as shown in the table on the bottom half of page 3 of this Schedule.

(14) *Average size premium applicable to the* 2nd and 3rd deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

Source of Information: Ibbotson Associates, Stocks, Bonds, Bills and Inflation – Valuation Edition – 2003 Yearbook, Chicago, IL, 2003

Aqua Illinois, Inc. - [illegible]dhaven Lakes Sewer Division
Market Capitalization of Aqua Illinois, Inc.
the Proxy Group of Six C. A. Turner Water Companies and the
the Proxy Group of Three Value Line (Standard (Edition) Water Companies and the
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Company	1. Common Stock Shares Outstanding at September 30, 2004 (millions)	2 Book Value per Share at September 30, 2004 (1)	3 Total Common Equity at September 30, 2004 (millions)	4 Closing Stock Market Price on December 7, 2004	5 Market-to-Book Ratio at December 7, 2004 (2)	6 Market Capitalization on December 7, 2004 (3) (millions)
Aqua Illinois, Inc.	0.750 (4)	$ 78.053	$ 58.540 (5)	NA		
Based upon the Proxy Group of Six C. A. Turner Water Companies					233.6 % (6)	$ 136.749 (7)
Based upon the Proxy Group of Three Value Line (Standard Edition) Water					225.7 % (8)	$ 132.125 (9)
Based upon the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					188.7 % (10)	$ 110.465 (10)
Proxy Group of Six C. A. Turner Water Companies						
American States Water Co.	15.318	$ 16.602	$ 254.303	$ 24.260	146.1 %	$ 371.615
Aqua America, Inc.	93.243	7.306	681.206	23.440	320.8	2,185.618
Artesian Resources Corp.	3.944	13.754	54.245	29.190	212.2	115.125
California Water Service Group	18.345	15.746	288.862	33.070	210.0	606.669
Middlesex Water Company	11.327	8.346	94.529	19.460	233.4	220.650
York Water Company	6.874	6.925	47.601	19.330	279.1	132.874
Average	24.842	$ 11.446	$ 236.791	$ 24.795	233.6 %	$ 605.425
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.	$ 15.318	$ 16.602	$ 254.303	$ 24.260	146.1 %	$ 371.615
Aqua America, Inc.	93.243	7.306	681.206	23.440	320.8	2,185.618
California Water Service Group	18.345	15.746	288.862	33.070	210.0	606.669
	$ 42.302	$ 13.218	$ 408.124	$ 26.923	225.7 %	$ 1,054.633
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance						
AGL Resources, Inc.	65.383	$ 15.651	$ 1,023.000	$ 32.480	207.5 %	$ 2,122.980
American States Water Co.	15.318	16.602	254.303	24.260	146.1	371.615
Aqua America, Inc.	93.243	7.306	681.206	23.440	320.8	2,185.616
California Water Services Group	18.345	15.746	288.862	33.070	210.0	606.669
Cinergy Corp.	180.986	20.890	3,780.939	41.640	199.3	7,536.673
Consolidated Edison, Inc.	241.326	29.479	7,114.000	43.730	148.3	10,553.166
Dominion Resources, Inc.	331.440	31.764	10,528.000	66.500	209.4	22,040.760
Green Mountain Power Corp.	5.930	18.105	107.360	26.800	148.0	158.924
KeySpan Corp.	160.357	23.324	3,740.232	38.280	164.1	6,138.466
Middlesex Water Company	11.327	8.345	94.529	19.480	233.4	220.650
Northwest Natural Gas Co.	27.373	20.032	548.324	32.230	160.9	882.232
Pinnacle West Capital Corp.	91.318	32.598	2,976.783	43.570	133.7	3,978.725
PNM Resources, Inc.	60.422	18.387	1,111.001	25.440	138.4	1,537.136
Southern Company	739.687	13.927	10,301.410	32.720	234.9	24,202.559
Southwest Water Company	17.303	7.307	128.429	12.880	176.3	222.863
Average	137.317	$ 18.631	$ 2,845.090	$ 33.101	188.7 %	$ 5,517.271

NA = Not Available

Notes:
(1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 5 * Column 3.
(4) From Schedule D - 7 , page 2.
(5) From WP-D1, at September 30, 2004.
(6) The market-to-book ratio of Aqua Illinois, Inc. at December 7, 2004 is assumed to be equal to the average market-to-book ratio at December 7, 2004 of the proxy group of six C. A. Turner Water Companies.
(7) Aqua Illinois, Inc.'s common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at December 7, 2004 of the proxy group of six C. A. Turner water companies, 233.6%, and Aqua Illinois' market capitalization at December 7, 2004 would therefore have been $136.749 million. ($136.749 = $58.540 * 233.6%).
(8) The market-to-book ratio of Aqua Illinois, Inc. at December 7, 2004 is assumed to be equal to the average market-to-book ratio at December 7, 2004 of the proxy group of three Value Line (Standard Edition) water companies.
(9) Aqua Illinois, Inc. common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at December 7, 2004 of the proxy group of three Value Line (Standard Edition) water companies, 225.7%, and Aqua Illinois' market capitalization at December 7, 2004 would therefore have been $132.125 million. ($132.125 = $58.540 * 225.7%).
(10) The market-to-book ratio of Aqua Illinois, Inc. at December 7, 2004 is assumed to be equal to the average market-to-book ratio at December 7, 2004 of the proxy group of fifteen utilities selected on the basis of least relative distance.
(11) Aqua Illinois, Inc. common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at December 7, 2004 of the proxy group of fifteen utilities selected on the basis of least relative distance, 188.7%, and Aqua Illinois' market capitalization at December 7, 2004 would therefore have been $110.465 million. ($110.465 = $58.540 * 188.7%).

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Data Base

Stocks, Bonds, Bills, and Inflation

SBBI

Valuation Edition
2004 Yearbook

Ibbotson Associates

Chapter 7

Firm Size and Return

The Firm Size Phenomenon

One of the most remarkable discoveries of modern finance is that of a relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones. Many studies have looked at the effect of firm size on return.[1] In this chapter, the returns across the entire range of firm size are examined.

Construction of the Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices (CRSP) at the University of Chicago's Graduate School of Business. CRSP has refined the methodology of creating size-based portfolios and has applied this methodology to the entire universe of NYSE/AMEX/NASDAQ-listed securities going back to 1926.

The New York Stock Exchange universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depository Receipts, unit investment trusts, and Americus Trusts. All companies on the NYSE are ranked by the combined market capitalization of their eligible equity securities. The companies are then split into 10 equally populated groups, or deciles. Eligible companies traded on the American Stock Exchange (AMEX) and the Nasdaq National Market (NASDAQ) are then assigned to the appropriate deciles according to their capitalization in relation to the NYSE breakpoints. The portfolios are rebalanced, using closing prices for the last trading day of March, June, September, and December. Securities added during the quarter are assigned to the appropriate portfolio when two consecutive month-end prices are available. If the final NYSE price of a security that becomes delisted is a month-end price, then that month's return is included in the quarterly return of the security's portfolio. When a month-end NYSE price is missing, the month-end value of the security is derived from merger terms, quotations on regional exchanges, and other sources. If a month-end value still is not determined, the last available daily price is used.

Base security returns are monthly holding period returns. All distributions are added to the month-end prices, and appropriate price adjustments are made to account for stock splits and dividends. The return on a portfolio for one month is calculated as the weighted average of the returns for its individual stocks. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

Size of the Deciles

Table 7-1 reveals that the top three deciles of the NYSE/AMEX/NASDAQ account for most of the total market value of its stocks. Approximately two-thirds of the market value is represented by the first decile, which currently consists of 168 stocks, while the smallest decile accounts for just over one percent of the market value. The data in the second column of Table 7-1 are averages across all

1 Rolf W. Banz was the first to document this phenomenon. See Banz, Rolf W. "The Relationship Between Returns and Market Value of Common Stocks," *Journal of Financial Economics*, Vol. 9, 1981, pp. 3–18.

78 years. Of course, the proportion of market value represented by the various deciles varies from year to year.

Columns three and four give recent figures on the number of companies and their market capitalization, presenting a snapshot of the structure of the deciles near the end of 2003.

Table 7-1
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Size and Composition
1926-2003

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Recent Percentage of Total Capitalization
1-Largest	63.33%	168	$7,419,638,030	64.91%
2	13.99%	186	1,471,629,952	12.87%
3	7.57%	198	746,716,927	6.53%
4	4.74%	200	451,145,013	3.95%
5	3.24%	221	337,041,577	2.95%
6	2.37%	277	290,452,647	2.54%
7	1.72%	343	238,327,258	2.08%
8	1.27%	379	171,437,318	1.50%
9	0.97%	613	168,889,652	1.48%
10-Smallest	0.80%	1,724	136,028,242	1.19%
Mid-Cap 3-5	15.55%	619	1,534,903,517	13.43%
Low-Cap 6-8	5.36%	999	700,217,223	6.13%
Micro-Cap 9-10	1.77%	2,337	304,917,894	2.67%

Source: © 200403 CRSP® Center for Research in Security Prices. Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. www.crsp.uchicago.edu.

Historical average percentage of total capitalization shows the average, over the last 78 years, of the decile market values as a percentage of the total NYSE/AMEX/NASDAQ calculated each month. Number of companies in deciles, recent market capitalization of deciles, and recent percentage of total capitalization are as of September 30, 2003.

Table 7-2 gives the current breakpoints that define the composition of the NYSE/AMEX/NASDAQ size deciles. The largest company and its market capitalization are presented for each decile. Table 7-3 shows the historical breakpoints for each of the three size groupings presented throughout this chapter. Mid-cap stocks are defined here as the aggregate of deciles 3–5. Based on the most recent data (Table 7-2), companies within this mid-cap range have market capitalizations at or below $4,794,027,000 but greater than $1,166,799,000. Low-cap stocks include deciles 6–8 and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below $1,166,799,000 but greater than $330,608,000. Micro-cap stocks include deciles 9–10 and include companies with market capitalizations at or below $330,608,000. The market capitalization of the smallest company included in the micro-capitalization group is currently $332 thousand.

Table 7-2

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization by Decile
September 30, 2003

Decile	Market Capitalization of Largest Company (in thousands)	Company Name
1-Largest	$286,638,305	General Electric Co.
2	11,366,767	Masco Corp.
3	4,794,027	EOG Resources Inc.
4	2,585,984	Toys R Us Inc.
5	1,720,959	International Rectifier Corp.
6	1,166,799	Thor Industries Inc.
7	795,983	Granite Construction Inc.
8	507,820	Steelcase Inc.
9	330,608	Sterling Bancorp
10-Smallest	168,414	Ethyl Corp.

Source: Center for Research in Security Prices, University of Chicago.

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles over 1926–2003 are presented in Table 7-4. Note from this exhibit that both the average return and the total risk, or standard deviation of annual returns, tend to increase as one moves from the largest decile to the smallest. Furthermore, the serial correlations of returns are near zero for all but the smallest two deciles. Serial correlations and their significance will be discussed in detail later in this chapter.

Graph 7-1 depicts the growth of one dollar invested in each of three NYSE/AMEX/NASDAQ groups broken down into mid-cap, low-cap, and micro-cap stocks. The index value of the entire NYSE/AMEX/NASDAQ is also included. All returns presented are value-weighted based on the market capitalizations of the deciles contained in each subgroup. The sheer magnitude of the size effect in some years is noteworthy. While the largest stocks actually declined in 1977, the smallest stocks rose more than 20 percent. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and tenth decile returns was far more substantial. This divergence in the performance of small and large company stocks is a common occurrence.

Table 7-3

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1926 to1965

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1926	$61,490	$14,040	$4,305	$14,100	$4,325	$43
1927	$65,281	$14,746	$4,450	$15,311	$4,496	$72
1928	$81,998	$18,975	$5,074	$19,050	$5,119	$135
1929	$107,085	$24,328	$5,875	$24,480	$5,915	$126
1930	$67,808	$13,050	$3,219	$13,068	$3,264	$30
1931	$42,607	$8,142	$1,905	$8,222	$1,927	$15
1932	$12,431	$2,170	$473	$2,196	$477	$19
1933	$40,298	$7,210	$1,830	$7,280	$1,875	$100
1934	$38,129	$6,669	$1,669	$6,734	$1,673	$68
1935	$37,631	$6,519	$1,350	$6,549	$1,383	$38
1936	$46,920	$11,505	$2,660	$11,526	$2,668	$98
1937	$51,750	$13,601	$3,500	$13,635	$3,539	$68
1938	$36,102	$8,325	$2,125	$8,372	$2,145	$60
1939	$35,764	$7,367	$1,697	$7,389	$1,800	$75
1940	$31,050	$7,990	$1,861	$8,007	$1,872	$51
1941	$31,744	$8,316	$2,086	$8,336	$2,087	$72
1942	$26,135	$6,870	$1,779	$6,875	$1,788	$82
1943	$43,218	$11,475	$3,847	$11,480	$3,903	$395
1944	$46,621	$13,066	$4,800	$13,068	$4,812	$309
1945	$55,268	$17,325	$6,413	$17,575	$6,428	$225
1946	$79,158	$24,192	$10,013	$24,199	$10,051	$829
1947	$57,830	$17,735	$6,373	$17,872	$6,380	$747
1948	$67,238	$19,575	$7,313	$19,651	$7,329	$784
1949	$55,506	$14,549	$5,037	$14,577	$5,108	$379
1950	$65,881	$18,675	$6,176	$18,750	$6,201	$303
1951	$82,517	$22,750	$7,567	$22,860	$7,598	$668
1952	$97,936	$25,452	$8,428	$25,532	$8,480	$480
1953	$98,595	$25,374	$8,156	$25,395	$8,168	$459
1954	$125,834	$29,645	$8,484	$29,707	$8,488	$463
1955	$170,829	$41,445	$12,353	$41,681	$12,366	$553
1956	$183,434	$46,805	$13,481	$46,886	$13,524	$1,122
1957	$192,861	$47,658	$13,844	$48,509	$13,848	$925
1958	$195,083	$46,774	$13,789	$46,871	$13,816	$550
1959	$253,644	$64,221	$19,500	$64,372	$19,548	$1,804
1960	$246,202	$61,485	$19,344	$61,529	$19,385	$831
1961	$296,261	$79,058	$23,562	$79,422	$23,613	$2,455
1962	$250,433	$58,866	$18,952	$59,143	$18,968	$1,018
1963	$308,438	$71,846	$23,819	$71,971	$23,822	$296
1964	$344,033	$79,343	$25,594	$79,508	$25,595	$223
1965	$363,759	$84,479	$28,365	$84,600	$28,375	$250

Source: Center for Research in Security Prices, University of Chicago.

Table 7-3 (continued)

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1966 to 2003

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1966	$399,455	$99,578	$34,884	$99,935	$34,966	$381
1967	$459,170	$117,985	$42,267	$118,329	$42,313	$381
1968	$528,326	$149,261	$60,351	$150,128	$60,397	$592
1969	$517,452	$144,770	$54,273	$145,684	$54,280	$2,119
1970	$380,246	$94,025	$29,910	$94,047	$29,916	$822
1971	$542,517	$145,340	$45,571	$145,673	$45,589	$865
1972	$545,211	$139,647	$46,728	$139,710	$46,757	$1,031
1973	$424,584	$94,809	$29,601	$95,378	$29,606	$561
1974	$344,013	$75,272	$22,475	$75,853	$22,481	$444
1975	$465,763	$96,954	$28,140	$97,266	$28,144	$540
1976	$551,071	$116,184	$31,987	$116,212	$32,002	$564
1977	$573,084	$135,804	$39,192	$137,323	$39,254	$513
1978	$572,967	$159,778	$46,621	$160,524	$46,629	$830
1979	$661,336	$174,480	$49,088	$174,517	$49,172	$948
1980	$754,562	$194,012	$48,671	$194,241	$48,953	$549
1981	$954,665	$259,028	$71,276	$261,059	$71,289	$1,446
1982	$762,028	$205,590	$54,575	$206,536	$54,883	$1,060
1983	$1,200,680	$352,698	$103,443	$352,944	$103,530	$2,025
1984	$1,068,972	$314,650	$90,419	$315,214	$90,659	$2,093
1985	$1,432,342	$367,413	$93,810	$368,249	$94,000	$760
1986	$1,857,621	$444,827	$109,958	$445,648	$109,975	$705
1987	$2,059,143	$467,430	$112,035	$468,948	$112,125	$1,277
1988	$1,957,926	$420,257	$94,268	$421,340	$94,302	$696
1989	$2,147,608	$480,975	$100,285	$483,623	$100,384	$96
1990	$2,164,185	$472,003	$93,627	$474,065	$93,750	$132
1991	$2,129,863	$457,958	$87,586	$458,853	$87,733	$278
1992	$2,428,671	$500,346	$103,352	$501,050	$103,500	$510
1993	$2,711,068	$608,520	$137,945	$608,825	$137,987	$602
1994	$2,497,073	$601,552	$149,435	$602,552	$149,532	$598
1995	$2,793,761	$653,178	$158,011	$654,019	$158,063	$89
1996	$3,150,685	$763,377	$195,188	$763,812	$195,326	$1,043
1997	$3,511,132	$818,299	$230,472	$821,028	$230,554	$480
1998	$4,216,707	$934,264	$253,329	$936,727	$253,338	$1,671
1999	$4,251,741	$875,309	$218,336	$875,582	$218,368	$1,502
2000	$4,143,902	$840,000	$192,598	$840,730	$192,721	$1,462
2001	$5,252,063	$1,114,792	$269,275	$1,115,200	$270,391	$443
2002	$5,012,705	$1,143,845	$314,042	$1,144,452	$314,174	$501
2003	$4,794,027	$1,166,799	$330,608	$1,167,040	$330,797	$332

Source: Center for Research in Security Prices, University of Chicago.

Table 7-4

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Summary Statistics of Annual Returns 1926–2003

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9.6%	11.4%	19.40%	0.09
2	10.8	13.2	22.12	0.03
3	11.2	13.8	24.00	-0.02
4	11.4	14.4	26.31	-0.02
5	11.5	14.9	27.18	-0.02
6	11.7	15.3	28.12	0.03
7	11.5	15.6	30.41	0.01
8	11.7	16.6	33.90	0.04
9	12.1	17.8	37.08	0.06
10-Smallest	13.9	21.7	45.95	0.15
Mid-Cap, 3–5	11.3	14.2	25.10	-0.02
Low-Cap, 6–8	11.7	15.7	29.88	0.03
Micro-Cap, 9–10	12.7	19.0	39.65	0.08
NYSE/AMEX/NASDAQ Total Value-Weighted Index	10.1	12.1	20.46	0.03

Source: Center for Research in Security Prices, University of Chicago.

Aspects of the Firm Size Effect

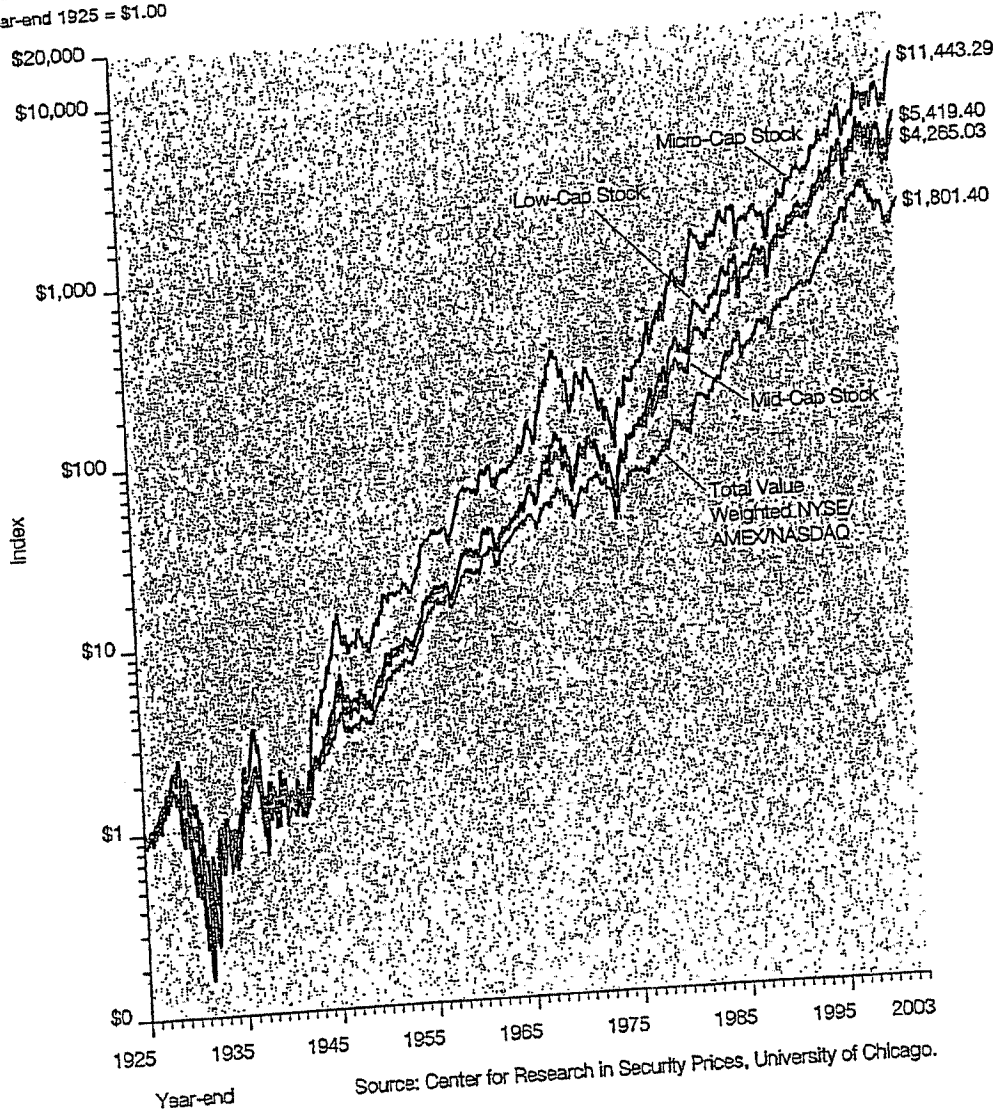
The firm size phenomenon is remarkable in several ways. First, the greater risk of small stocks does not, in the context of the capital asset pricing model (CAPM), fully account for their higher returns over the long term. In the CAPM, only systematic or beta risk is rewarded; small company stocks have had returns in excess of those implied by their betas.

Second, the calendar annual return differences between small and large companies are serially correlated. This suggests that past annual returns may be of some value in predicting future annual returns. Such serial correlation, or autocorrelation, is practically unknown in the market for large stocks and in most other equity markets but is evident in the size premia.

Third, the firm size effect is seasonal. For example, small company stocks outperformed large company stocks in the month of January in a large majority of the years. Such predictability is surprising and suspicious in light of modern capital market theory. These three aspects of the firm size effect—long-term returns in excess of systematic risk, serial correlation, and seasonality—will be analyzed thoroughly in the following sections.

Graph 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro- and Total Capitalization Stocks
1925–2003
Year-end 1925 = $1.00



Source: Center for Research in Security Prices, University of Chicago.

Long-Term Returns in Excess of Systematic Risk

The capital asset pricing model (CAPM) does not fully account for the higher returns of small company stocks. Table 7-5 shows the returns in excess of systematic risk over the past 78 years for each decile of the NYSE/AMEX/NASDAQ. Recall that the CAPM is expressed as follows:

$$k_s = r_f + (\beta_s \times ERP)$$

Table 7-5 uses the CAPM to estimate the return in excess of the riskless rate and compares this estimate to historical performance. According to the CAPM, the expected return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. The return in excess of the riskless rate is estimated in the context of the CAPM by multiplying the equity risk premium by β (beta). The equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (systematic risk).[2] Beta measures the extent to which a security or portfolio is exposed to systematic risk.[3] The beta of each decile indicates the degree to which the decile's return moves with that of the overall market.

A beta greater than one indicates that the security or portfolio has greater systematic risk than the market; according to the CAPM equation, investors are compensated for taking on this additional risk. Yet, Table 7-5 illustrates that the smaller deciles have had returns that are not fully explainable by their higher betas. This return in excess of that predicted by CAPM increases as one moves from the largest companies in decile 1 to the smallest in decile 10. The excess return is especially pronounced for micro-cap stocks (deciles 9–10). This size-related phenomenon has prompted a revision to the CAPM, which includes a size premium. Chapter 4 presents this modified CAPM theory and its application in more detail.

This phenomenon can also be viewed graphically, as depicted in the Graph 7-2. The security market line is based on the pure CAPM without adjustment for the size premium. Based on the risk (or beta) of a security, the expected return lies on the security market line. However, the actual historic returns for the smaller deciles of the NYSE/AMEX/NASDAQ lie above the line, indicating that these deciles have had returns in excess of that which is appropriate for their systematic risk.

2 The equity risk premium is estimated by the 78-year arithmetic mean return on large company stocks, 12.41 percent, less the 78-year arithmetic mean income-return component of 20-year government bonds as the historical riskless rate, in this case 5.23 percent. (It is appropriate, however, to match the maturity, or duration, of the riskless asset with the investment horizon.) See Chapter 5 for more detail on equity risk premium estimation.

3 Historical betas were calculated using a simple regression of the monthly portfolio (decile) total returns in excess of the 30-day U.S. Treasury bill total returns versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2003. See Chapter 6 for more detail on beta estimation.

Table 7-5

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2003

Decile	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.43%	6.21%	6.54%	-0.34%
2	1.04	13.16%	7.94%	7.44%	0.50%
3	1.10	13.78%	8.55%	7.88%	0.67%
4	1.13	14.43%	9.20%	8.09%	1.11%
5	1.16	14.91%	9.68%	8.32%	1.36%
6	1.18	15.32%	10.09%	8.50%	1.59%
7	1.23	15.65%	10.42%	8.85%	1.57%
8	1.28	16.64%	11.42%	9.16%	2.25%
9	1.34	17.78%	12.53%	9.63%	2.90%
10-Smallest	1.41	21.73%	16.50%	10.16%	6.34%
Mid-Cap, 3-5	1.12	14.16%	8.93%	8.02%	0.91%
Low-Cap, 6-8	1.22	15.67%	10.44%	8.74%	1.70%
Micro-Cap, 9-10	1.36	18.98%	13.75%	9.74%	4.01%

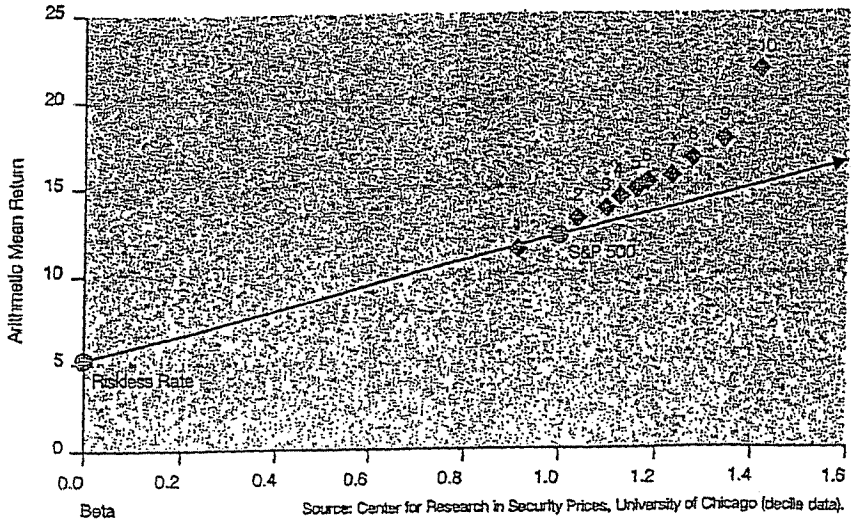
*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2003.

**Historical riskless rate is measured by the 78-year arithmetic mean income return component of 20-year government bonds (5.23 percent).

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.41 percent) minus the arithmetic mean income return component of 20-year government bonds (5.23 percent) from 1926–2003.

Graph 7-2

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2003



Source: Center for Research in Security Prices, University of Chicago (decile data).

Further Analysis of the 10th Decile

The size premia presented thus far do a great deal to explain the return due solely to size in publicly traded companies. However, by splitting the 10th decile into two size groupings we can get a closer look at the smallest companies. This magnification of the smallest companies will demonstrate whether the company size to size premia relationship continues to hold true.

As previously discussed, the method for determining the size groupings for size premia analysis was to take the stocks traded on the NYSE and break them up into 10 deciles, after which stocks traded on the AMEX and NASDAQ were allocated into the same size groupings. This same methodology was used to split the 10th decile into two parts: 10a and 10b, with 10b being the smaller of the two. This is equivalent to breaking the stocks down into 20 size groupings, with portfolios 19 and 20 representing 10a and 10b.

Table 7-7 shows that the pattern continues; as companies get smaller their size premium increases. There is a noticeable increase in size premium from 10a to 10b, which can also be demonstrated visually in Graph 7-3. This can be useful in valuing companies that are extremely small. Table 7-6 presents the size, composition, and breakpoints of deciles 10a and 10b. First, the recent number of companies and total decile market capitalization are presented. Then the largest company and its market capitalization are presented.

Breaking the smallest decile down lowers the significance of the results compared to results for the 10th decile taken as a whole, however. The same holds true for comparing the 10th decile with the Micro-Cap aggregation of the 9th and 10th deciles. The more stocks included in a sample the more significance can be placed on the results. While this is not as much of a factor with the recent years of data, these size premia are constructed with data back to 1926. By breaking the 10th decile down into smaller components we have cut the number of stocks included in each grouping. The change over time of the number of stocks included in the 10th decile for the NYSE/AMEX/NASDAQ is presented in Table 7-8. With fewer stocks included in the analysis early on, there is a strong possibility that just a few stocks can dominate the returns for those early years.

While the number of companies included in the 10th decile for the early years of our analysis is low, it is not too low to still draw meaningful results even when broken down into subdivisions 10a and 10b. All things considered, size premia developed for deciles 10a and 10b are significant and can be used in cost of capital analysis. These size premia should greatly enhance the development of cost of capital analysis for very small companies.

Table 7-6

Size-Decile Portfolios 10a and 10b of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization
September 30, 2003

Decile	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Market Capitalization of Largest Company (in thousands)	Company Name
10a	554	$75,931,424	$166,414	Ethyl Corp.
10b	1,158	$54,867,824	$96,928	Mesa Royalty Trust

Note: These numbers may not aggregate to equal decile 10 figures.
Source: Center for Research in Security Prices, University of Chicago.

Table 7-7

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926–2003

	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.43%	6.21%	6.54%	-0.34%
2	1.04	13.16%	7.94%	7.44%	0.50%
3	1.10	13.78%	8.55%	7.88%	0.67%
4	1.13	14.43%	9.20%	8.09%	1.11%
5	1.16	14.91%	9.68%	8.32%	1.36%
6	1.18	15.32%	10.09%	8.50%	1.59%
7	1.23	15.65%	10.42%	8.85%	1.57%
8	1.28	16.64%	11.42%	9.16%	2.25%
9	1.34	17.76%	12.53%	9.63%	2.90%
10a	1.42	19.93%	14.70%	10.20%	4.50%
10b-Smallest	1.40	25.08%	19.85%	10.03%	9.82%
Mid-Cap, 3–5	1.12	14.16%	8.93%	8.02%	0.91%
Low-Cap, 6–8	1.22	15.67%	10.44%	8.74%	1.70%
Micro-Cap, 9-10	1.36	18.98%	13.75%	9.74%	4.01%

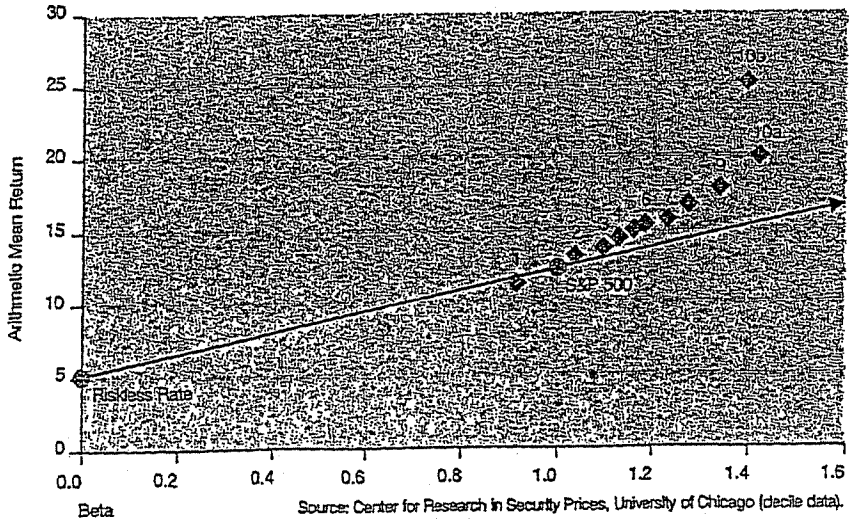
*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2003.

**Historical riskless rate is measured by the 78-year arithmetic mean income return component of 20-year government bonds (5.23 percent).

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.41 percent) minus the arithmetic mean income return component of 20-year government bonds (5.23 percent) from 1926–2003.

Graph 7-3

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926-2003



Source: Center for Research in Security Prices, University of Chicago (decile data).

Table 7-8
Historical Number of Companies for NYSE/AMEX/NASDAQ Decile 10

Sept.	Number of Companies
1926	52*
1930	72
1940	78
1950	100
1960	109
1970	865
1980	685
1990	1,814
2000	1,927
2003	1,724

*The fewest number of companies was 49 in March, 1926

Source: Center for Research in Security Prices, University of Chicago.

Alternative Methods of Calculating the Size Premia

The size premia estimation method presented above makes several assumptions with respect to the market benchmark and the measurement of beta. The impact of these assumptions can best be examined by looking at some alternatives. In this section we will examine the impact on the size premia of using a different market benchmark for estimating the equity risk premia and beta. We will also examine the effect on the size premia study of using sum beta or an annual beta.[4]

Changing the Market Benchmark

In the original size premia study, the S&P 500 is used as the market benchmark in the calculation of the realized historical equity risk premium and of each size group's beta. The NYSE total value-weighted index is a common alternative market benchmark used to calculate beta. Table 7-9 uses this market benchmark in the calculation of beta. In order to isolate the size effect, we require an equity risk premium based on a large company stock benchmark. The NYSE deciles 1–2 large company index offers a mutually exclusive set of portfolios for the analysis of the smaller company groups: mid-cap deciles 3–5, low-cap deciles 6–8, and micro-cap deciles 9–10. The size premia analyses using these benchmarks are summarized in Table 7-9 and depicted graphically in Graph 7-4.

For the entire period analyzed, 1926–2003, the betas obtained using the NYSE total value-weighted index are higher than those obtained using the S&P 500. Since smaller companies had higher betas using the NYSE benchmark, one would expect the size premia to shrink. However, as was illustrated in Chapter 5, the equity risk premium calculated using the NYSE deciles 1–2 benchmark results in a value of 6.40, as opposed to 7.19 when using the S&P 500. The effect of the higher betas and lower equity risk premium cancel each other out, and the resulting size premia in Table 7-9 are slightly higher than those resulting from the original study.

4 Sum beta is the method of beta estimation described in Chapter 6 that was developed to better account for the lagged reaction of small stocks to market movements. The sum beta methodology was developed for the same reason that the size premia were developed; small company betas were too small to account for all of their excess returns.

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