In the Matter of the Application of Kansas Gas Service, a Division of ONEOK, Inc. for Adjustment of its Natural Gas Rates in the State of Kansas	)))))	DOCKET NO. 06-KGSG-___-RTS

DIRECT TESTIMONY
OF
WILLIAM E. AVERA

ON BEHALF OF
KANSAS GAS SERVICE
A DIVISION OF ONEOK, INC

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I. INTRODUCTION

Q. Please state your name and business address.

A. William E. Avera, 3907 Red River, Austin, Texas 78751.

Q. In what capacity are you employed?

A. I am a principal in Financial Concepts and Applications, Inc. (FINCAP), a firm engaged in financial, economic, and policy consulting to business and government.

A. Qualifications

Q. What are your qualifications?

A. I received a B.A. degree with a major in economics from Emory University. After serving in the United States Navy, I entered the doctoral program in economics at the University of North Carolina at Chapel Hill. Upon receiving my Ph.D., I joined the faculty at the University of North Carolina and taught finance in the Graduate School of Business. I subsequently accepted a position at the University of Texas at Austin where I taught courses in financial management and investment analysis. I then went to work for International Paper Company in New York City as Manager of Financial Education, a position in which I had responsibility for all corporate education programs in finance, accounting, and economics.

In 1977, I joined the staff of the Public Utility Commission of Texas (PUCT) as Director of the Economic Research Division. During my tenure at the PUCT, I managed a division responsible for financial analysis, cost allocation and rate design, economic and financial research, and data processing systems, and I testified in cases on a variety of financial and economic issues. Since leaving the PUCT in 1979, I have been engaged as a consultant. I have participated in a wide range of assignments involving utility-related matters on behalf of utilities, industrial customers, municipalities, and regulatory commissions. I have previously testified before the Federal Energy Regulatory Commission (FERC), as well as the Federal Communications Commission (FCC), the Surface Transportation Board (and its predecessor, the Interstate Commerce Commission), the Canadian Radio-Television and Telecommunications Commission, and regulatory agencies, courts, and

legislative committees in over 36 states, including the State Corporation Commission of the State of Kansas (KCC or the Commission).

I was appointed by the PUCT to the Synchronous Interconnection Committee to advise the Texas legislature on the costs and benefits of connecting Texas to the national electric transmission grid. In addition, I served as an outside director of Georgia System Operations Corporation, the system operator for electric cooperatives in Georgia.

I have served as Lecturer in the Finance Department at the University of Texas at Austin and taught in the evening graduate program at St. Edward's University for twenty years. In addition, I have lectured on economic and regulatory topics in programs sponsored by universities and industry groups. I have taught in hundreds of educational programs for financial analysts in programs sponsored by the CFA Institute (formerly the Association for Investment Management and Research), the Financial Analysts Review, and local financial analysts societies. These programs have been presented in Asia, Europe, and North America, including the Financial Analysts Seminar at Northwestern University. I hold the Chartered Financial Analyst (CFA®) designation and have served as Vice President for Membership of the Financial Management Association. I also have served on the Board of Directors of the North Carolina Society of Financial Analysts. I was elected Vice Chairman of the National Association of Regulatory Commissioners (NARUC) Subcommittee on Economics and appointed to NARUC's Technical Subcommittee on the National Energy Act. I also have served as an officer of various other professional organizations and societies. A resume containing the details of my experience and qualifications is attached as Appendix A.

B. Overview

Q. What is the purpose of your testimony in this case?

A. The purpose of my testimony is to present to the Commission my independent assessment of the overall rate of return (ROR) to apply to the rate base of Kansas Gas Service, a division of ONEOK, Inc. (Kansas Gas Service), used in providing natural gas distribution service.

Q. Please summarize the basis of your knowledge and conclusions concerning the issues to which you are testifying in this case.

A. To prepare my testimony, I used information from a variety of sources that would normally be relied on by a person in my capacity. I am familiar with the organization, operations, and finances of Kansas Gas Service from my participation in prior proceedings before the KCC. In connection with the present filing, I considered and relied upon corporate disclosures and management discussions, publicly available financial reports and filings, and other published information relating to Kansas Gas Service and its parent, ONEOK. I also reviewed information relating generally to capital markets and specifically to investor perceptions, requirements, and expectations for natural gas utilities. These sources, coupled with my experience in the fields of finance and utility regulation, have given me a working knowledge of Kansas Gas Service and are the basis of my conclusions.

Q. What is the role of the rate of return in setting a utility's rates?

A. The rate of return serves to compensate investors for the use of their capital to finance the plant and equipment necessary to provide utility service. Investors will only commit money if the anticipated return on an investment is commensurate with returns available from other investment alternatives having comparable risks. Consistent with both sound regulatory economics and the standards specified in the *Bluefield*[1] and *Hope*[2] cases, the KCC should allow a return on investment that is sufficient to: 1) fairly compensate for capital invested in the utility, 2) enable the utility to offer a return adequate to attract new capital on reasonable terms, and 3) maintain the utility's financial integrity.

Q. How did you develop your conclusions regarding a fair rate of return for Kansas Gas Service?

A. I first reviewed the operations and finances of Kansas Gas Service and the general conditions in the gas utility industry and the economy. With this as a background, I developed a capital structure for use in calculating an overall rate of return. This was based on an examination of the mix of investor-supplied capital – debt and common

[1] Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n, 262 U.S. 679 (1923).

[2] *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

equity – maintained by ONEOK and a reference group of natural gas local distribution companies (LDCs), as well as by reference to other industry standards. In addition, the average cost of the debt component of the capital structure was determined.

I then conducted various quantitative analyses to estimate the cost of equity. These included discounted cash flow (DCF) analyses, risk premium methods encompassing alternative approaches and studies, and reference to comparable earned rates of return expected for utilities and industrial firms. Based on the cost of equity estimates indicated by my analyses, Kansas Gas Service's return on equity (ROE) was evaluated taking into account other factors (*i.e.,* flotation costs) properly considered in establishing a fair ROE for Kansas Gas Service's gas utility operations. Finally, the findings of my various analyses were then combined to calculate an overall ROR to be applied to Kansas Gas Service's rate base.

C. Summary of Conclusions

Q. What are your findings regarding the fair rate of return for Kansas Gas Service?

A. I recommend that Kansas Gas Service be authorized an overall rate of return of approximately 8.87%. The capital structure and component costs used to arrive at my recommendation are summarized in the table below:

Capital Component	Percent of Total	Component Cost	Weighted Cost
Long-term Debt	47.5233%	6.2354%	2.9633%
Common Equity	52.4767%	11.2500%	5.9036%
Total	100.0000%		8.8669%

Q. What is your conclusion as to the reasonableness of Kansas Gas Service's capital structure?

A. Kansas Gas Service is requesting that a capital structure composed of approximately 47.5% debt and 52.5% common equity be used to calculate the overall ROR in this case, based on ONEOK's capitalization at test year-end, as adjusted. My evaluation demonstrated that this capital structure represents a reasonable basis from which to

calculate Kansas Gas Service's overall rate of return. This conclusion was based on the following findings:

- ONEOK's test year-end common equity ratio, as adjusted, is entirely consistent with the range of capital structures maintained by the gas distribution utilities in the proxy group, especially after considering the trend towards lower financial leverage expected for the industry;
- A capital structure consisting of 47.5% debt and 52.5% common equity falls within the guideline ranges specified by bond rating agencies for a single-A rated gas distribution utility;
- For a utility with an obligation to provide reliable service, ongoing industry uncertainties highlight the necessity of preserving flexibility, even during periods of adverse capital market conditions.

Q. What embedded cost was applicable to the long-term debt component of Kansas Gas Service's capital structure?

A. Dividing the total annual cost by the gross amount outstanding for ONEOK's debt issues resulted in an average embedded cost of debt for Kansas Gas Service of 6.2354%.

Q. What are your findings regarding the fair rate of return on equity for Kansas Gas Service?

A. Based on the results of my analyses and the economic requirements necessary to support continuous access to capital, I determined that a fair rate of return on equity for Kansas Gas Service is currently on the order of 11.25%. The bases for my conclusion are summarized below:

- Applications of DCF, risk premium, and comparable earnings approaches to a reference group of gas distribution utilities implied a cost of equity in the range of 10.5% to 11.5%;
- Incorporating a 25 basis-point allowance for equity flotation costs resulted in a fair rate of return range for the gas utility proxy group of 10.75% to 11.75%, with a midpoint of 11.25%;
- Kansas Gas Service's weather normalization adjustment mechanism (WNA) and other adjustment riders do not warrant any downward adjustment to this cost of equity because the proxy companies used to estimate the cost of equity are also largely shielded from the impact of abnormal weather and a variety of operating risks.

Considering the importance of maintaining reliable and economical utility service and the damage that results when a utility's financial flexibility is

compromised, supportive regulation is perhaps more crucial now than at any time in the past. The cost of providing Kansas Gas Service an adequate return is small relative to the potential benefits of having a financially sound utility that can provide reliable service at reasonable rates and a platform for economic growth; especially when compared against the burden imposed by a financially troubled service provider.

II. Fundamental Analysis

Q. What is the purpose of this section?

A. As a predicate to subsequent quantitative analyses, this section briefly reviews Kansas Gas Service 's operations and finances. In addition, it examines the risks and prospects for the natural gas industry as a whole, along with conditions in the capital markets and the general economy. An understanding of the fundamental factors driving the risks and prospects of gas utilities is essential in developing an informed opinion of investors' expectations and requirements, which form the basis of a fair rate of return.

A. Kansas Gas Service

Q. Briefly describe the operations and finances of Kansas Gas Service.

A. Kansas Gas Service provides natural gas distribution services to approximately 70% of Kansas' population. Kansas Gas Service is a wholly owned division of ONEOK, a diversified energy company. Formerly owned by Western Resources, Inc. (Western), now Westar, Kansas Gas Service's gas operations were acquired by and merged into ONEOK in 1997. At December 31, 2005, Kansas Gas Service supplied natural gas to more than 642,000 customers in 341 communities, with the largest markets served being the Kansas communities of Wichita, Topeka, Kansas City, and Overland Park. The Kansas Gas Service system consists of over 17,000 miles of mains and services. Kansas Gas Service obtains its gas supply from a variety of sources, including direct wellhead production, gas processing plants, and natural gas marketers.

Q. Please briefly describe ONEOK.

A. In addition to gas distribution, ONEOK is engaged in the marketing and trading of natural gas. Through its ownership in the Northern Borders Partners, L.P. master limited partnership, ONEOK also participates in natural gas gathering and processing, natural gas liquids extraction, transportation, and marketing, as well as ownership and operation of major natural gas pipeline and storage facilities.

Q. Where does Kansas Gas Service obtain the capital used to finance its investment in gas utility plant?

A. As an operating division of ONEOK, Kansas Gas Service obtains capital solely from ONEOK. ONEOK's common stock is publicly traded on the New York Stock Exchange. At test year-ended December 31, 2005, ONEOK had outstanding approximately $2.0 billion in long-term debt. ONEOK is assigned a corporate credit rating of "BBB" by Standard & Poor's Corporation (S&P), with Moody's Investor Services (Moody's) rating ONEOK's senior debt "Baa2". On February 15, 2006, S&P placed ONEOK on *CreditWatch* with a negative outlook, warning investors of the possibility of downward ratings actions.[3]

B. Natural Gas Utility Industry

Q. What general conditions have characterized the natural gas industry over the last two decades?

A. Beginning in approximately 1980, the natural gas industry was buffeted by decreasing demand and prices, a gas glut, an ever-changing federal regulatory environment, and increased competition among participants and with other fuels. These developments spawned striking structural changes, not only within the pipeline segment of the industry, but for natural gas local distribution companies as well. At least initially, this process was largely driven by regulatory reforms at the federal level, with FERC being an aggressive proponent for actions designed to foster greater competition in markets for wholesale energy supply. While the FERC aspired to make the natural gas industry more competitive and broaden the market

[3] Standard & Poor's Corporation, "Research Update: ONEOK, Northern Border Ratings Are Placed On CreditWatch Re Ownership, Asset Transactions," *RatingsDirect* (Feb. 15, 2006).

for gas supplies through its Order Nos. 436, 500, and 636, this dramatic restructuring also introduced considerable uncertainties and dislocations felt heavily by conventional utility systems.

These structural changes on both the demand and supply sides of the natural gas industry have created new uncertainties for market participants. Both pipelines and LDCs have experienced "bypass" as large commercial, industrial, and wholesale customers seek to acquire gas supplies at the lowest possible cost and, in the process, abandon traditional "full-service" utility suppliers. The dramatic structural changes within the natural gas industry have forced LDCs to confront new complexities and risks entailed in actively contracting for an economical, secure gas supply. Further, changes in transportation rate design mandated by FERC Order No. 636 shifted greater cost responsibility for pipeline demand costs to low load factor customers and, particularly, LDCs who purchase transportation services from interstate pipelines. Coupled with an increasingly competitive market environment, these structural changes have resulted in greater business risk and operating leverage.

Q. What other factors are of concern to investors?

A. In recent years LDCs and their customers have also had to contend with dramatic fluctuations in gas costs due to ongoing price volatility in the spot markets.[4] S&P recognized that price spikes can "encourage users to substitute alternative fuels and discourage potential new customers from choosing natural gas,"[5] and recently concluded that:

> [C]urrent high gas prices will remain a challenge for all LDCs and may further pressure ratings for those LDCs that have a negative outlook and whose financial measures are somewhat stretched for their current rating.[6]

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[4] For example, the Energy Information Administration ("EIA") reported that the average spot gas price at the Henry Hub spiked to $18.85 per MMBtu in February 2003, before declining to approximately $5.00. More recently, EIA noted that "prices at the Henry Hub on Wednesday, October 12 exceeded last year's level by $8.36 per MMBtu or about 156 percent." (*Natural Gas Weekly Update,* Mar. 27, 2003 and Oct. 13, 2005).

[5] Standard & Poor's Corporation, "Natural Gas Distribution", *Industry Surveys*, p. 1 (Nov. 29, 2001).

[6] Standard & Poor's Corporation, "Prolonged High Natural Gas Prices May Increase Credit Risk For U.S. Gas Distribution Companies," *RatingsDirect* (Jan. 17, 2006).

Fitch Ratings, Ltd. (Fitch) highlighted the challenges that fluctuations in commodity prices can have for utilities and their investors, observing that higher gas prices "depress consumer demand."[7] The Value Line Investment Survey (Value Line) recently echoed this sentiment, concluding that rising natural gas prices can result in loss of customers to other fuels and reduced demand due to conservation.[8] As a result, a senior Fitch analysts concluded that investors "should exercise greater caution" when evaluating companies in the gas utility sector.[9]

Q. Do recent conditions ameliorate investors' concerns regarding the potential for gas price volatility?

A. No. Investors recognize that the continuing prospect of further turmoil in energy markets cannot be discounted, with S&P reporting that:

> [T]he Henry Hub natural gas price remains extremely high and has averaged about $11.27 per mmBtu thus far during the 2005-2006 heating season, which is well above both the average $6.09 and $5.56 per mmBtu for the past two heating seasons in 2005 and 2004, respectively, and well above the 10-year average of about $4.32 per mmBtu. The current high gas price ... further heightens Standard & Poor's Ratings Services concerns on the potential impact for LDCs operating in a fourth consecutive heating season with current high natural gas prices.[10]

As the Economist Intelligence Unit, Ltd. indicated, this sensitivity has only been magnified by fallout of last year's natural disaster in the Gulf Coast region:

> Hurricane Katrina has sent gas prices to new record levels, exacerbating an already supply-tight market that has seen high prices for the last two years. There is little indication that the situation will improve in 2006...[11]

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[7] Fitch Ratings, Ltd., "Outlook 2005: U.S. Power & Gas," *Global Power / North American Special Report* (Jan. 6, 2005) at 16.

[8] The Value Line Investment Survey (Dec. 16, 2005).

[9] Lapson, Ellen, "Rising Unit Costs & Credit Quality: Warning Signals," *Public Utilities Fortnightly* (Feb. 1, 2006).

[10] Standard & Poor's Corporation, "Prolonged High Natural Gas Prices May Increase Credit Risk for U.S. Gas Distributors," *RatingsDirect* (Jan. 17, 2006).

[11] Economist Intelligence Unit, Ltd., "World Commodities – Natural gas market outlook," (Sep. 1, 2005) at 1.

More recently, Natural Gas Intelligence cited investor sentiment that natural gas markets have entered "a dangerous time,"[12] and concluded that:

> Despite natural gas storage levels sitting near record highs, natural gas futures prices remain lofty compared to past years, likely due to elevated petroleum prices and fear-based premiums attached to the upcoming hurricane season.[13]

S&P noted that "volatile and high" natural gas prices will "remain a challenge for all LDCs" and are contributing to a negative credit outlook for natural gas distribution utilities.[14]

Q. Do the potential exposures faced by gas utilities highlight the need for ongoing support of a utility's financial strength and ability to attract capital?

A. Yes. Given the potential for significant volatility in natural gas markets and a utility's lack of control over the timing of such events, LDCs must have the wherewithal to meet these challenges even when energy market conditions are unfavorable. Considering investors' heightened awareness of the risks associated with high and volatile gas prices, supportive regulation remains crucial in preserving financial integrity and access to capital.

Investors recognize that constructive regulation is a key ingredient in supporting utility credit ratings and financial integrity, particularly during times of adverse conditions. S&P noted that:

> When examining the quality of regulation, Standard & Poor's factors in what level of support the utility might get in times of distress, when its needs are most acute.[15]

S&P went on to cite the importance of financial flexibility, especially considering the capital markets' ability to constrict access to capital when investors' confidence is compromised. Similarly, S&P affirmed that regulatory decisions have become a

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[12] "Natural Gas Prices Buoyed by Petroleum Strength, Hurricane Concerns," *Natural Gas Intelligence* (Apr. 10, 2006)

[13] *Id.*

[14] Standard & Poor's Corporation, "Key Credit Factors For U.S. Natural Gas Distributors," *RatingsDirect* (Feb. 28, 2006)

[15] Standard & Poor's Corporation, "Regulation and Credit Quality in the U.S. Utility Sector," *RatingsDirect* (Jan. 30, 2003).

"dominant factor" in their assessment of credit quality,[16] and concluded that "[c]ontinued regulatory support is paramount to credit quality for LDCs, especially during periods of prolonged high natural gas prices."[17]

Q. Are these the only risks faced by natural gas distribution utilities?

A. No. As Fitch noted in a recent review of the utility industry, apart from exposure to volatile commodity prices, "over the coming five years ... the sector is increasingly expected to face negative credit factors," including the pressures of rising interest rates and higher capital expenditures.[18] In addition, utilities have faced numerous changes in financial accounting standards, such as those relating to accounting for post-retirement benefits other than pensions, which have regulatory as well as financial reporting implications. As Value Line reported to investors:

> On the regulated front, utilities are incurring greater operating costs, as a result of higher pension and post-retirement benefit obligations, in addition to increased medical and property insurance premiums. [19]

Besides these problems, LDCs such as Kansas Gas Service continue to face many of the same challenges confronted in the past, including maintaining customer growth, controlling costs and rates, buying gas prudently, and maintaining good relations with regulators, and dealing with the adverse effects of inflation and interest rate changes.

C. Capital Markets and Economy

Q. What has been the pattern of interest rates over the last decade?

A. Average long-term public utility bond rates, the monthly average prime rate, and inflation as measured by the consumer price index since 1990 are plotted in the graph below. After rising to approximately 10% in mid-1990, the average yield on long-term public utility bonds generally fell as economic conditions weakened in the

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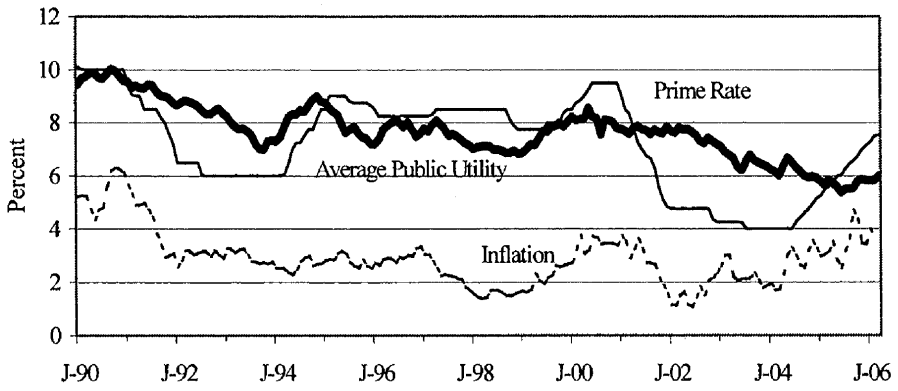
[16] Standard & Poor's Corporation, "Industry Report Card: U.S. Electric/Water/Gas," *RatingsDirect* (Jul. 6, 2005).

[17] Standard & Poor's Corporation, "Prolonged High Natural Gas Prices May Increase Credit Risk For U.S. Gas Distribution Companies," *RatingsDirect* (Jan. 17, 2006).

[18] Fitch Ratings, Ltd., "U.S. Power & Gas 2006 Outlook," *Global Power / North American Special Report* (Dec. 15, 2005) at 2.

aftermath of the 1991 Gulf war, with rates dipping below 7% in late 1993. Yields subsequently rose again in 1994, before beginning a general decline, with investors requiring approximately 6.0% from average public utility bonds in March 2006, with spot yields now on the order of 6.3%:[20]



Q. Are investors likely to anticipate any substantial decline in interest rates going forward?

A. No. Between 2001 and 2003, a great deal of attention was focused on the actions of the Federal Reserve Board (Fed) as it moved successively to lower short-term interest rates in response to weakness in the United States economy. More recently, with a strengthening economy and volatile energy prices, Fed policymakers and investors have focused on the prospects for higher inflation. Thus, while interest rates are currently at relatively low levels, investors are unlikely to expect significant declines going forward. Indeed, on March 28, 2006 the Fed raised interest rates for the fifteenth time since June 2004. The latest quarter-point increase raised the target discount rate to 4.75%, or almost five times the 46-year low of 1.00% in effect when the Fed began its credit-tightening campaign in 2004. As Value Line noted, the investment community's general expectation is that interest rates will continue to rise in the short-run as the Fed nears the end of its tightening cycle.[21]

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[19] The Value Line Investment Survey (Dec. 17, 2004) at 459.

[20] Moody's Investors Service, *Credit Perspectives* (Apr. 17, 2006) at 60.

[21] The Value Line Investment Survey, *Selection & Opinion* (Apr. 7, 2006) at 1191.

Consistent with the general expectations that the Fed's actions will also translate into higher long-term bond yields, the most recent forecast of GlobalInsight, a widely referenced forecasting service, calls for double-A public utility bond yields to reach 6.51% in 2007.[22] Meanwhile, the Energy Information Administration ("EIA"), a statistical agency of the U.S. Department of Energy, anticipates that the double-A public utility bond yield will reach 6.65% in 2007.[23] The projections published by Blue Chip Financial Forecasts ("Blue Chip") also anticipate that corporate bond yields will rise approximately 60 basis points through the third quarter of 2007.[24]

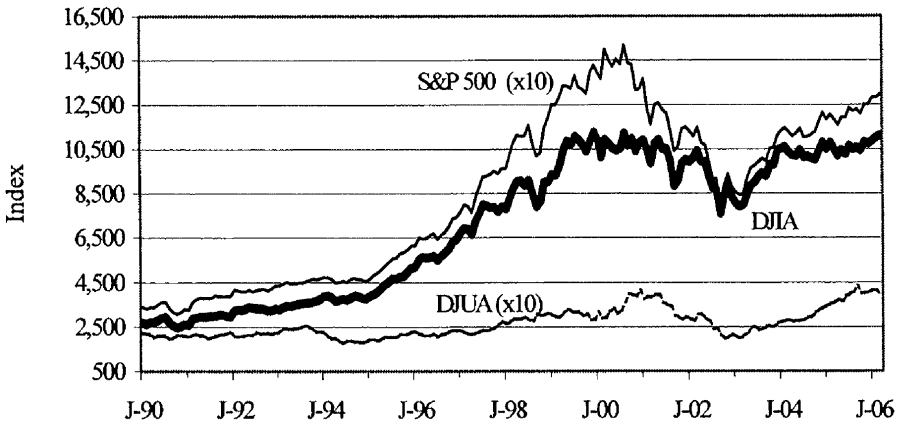
Q. How has the market for common equity capital performed?

A. Between 1990 and early 2000 stock prices pushed steadily higher as the longest bull market in United States history continued unabated. While the S&P 500 had increased over four times in value by August 2000, mounting concerns regarding prospects for future growth, particularly for firms in the high technology and telecommunications sectors, pushed equity prices lower, in some cases precipitously. While common stock prices have recovered strongly from their lows, the market remains volatile, with share values routinely changing in full percentage points during a single day's trading. The graph below plots the performances of the Dow-Jones Industrial Average, the S&P 500, and the Dow Jones Utility Average since 1990 (the latter two indices were scaled for comparability):

[22] GlobalInsight, "The U.S. Economy: The 25-Year Focus" (Third-Quarter 2005) at Table 34. This is the only series of projections for public utility bond yields reported by GlobalInsight.

[23] Energy Information Administration, "Annual Energy Outlook 2006" (Jan. 2006) at Table 19. This is the only series of projections for public utility bond yields reported by EIA.

[24] Blue Chip Financial Forecasts (Apr. 1, 2006) at 2.



Q. What is the outlook for the United States economy?

A. Despite the fact that the economic picture has brightened significantly since the 2001 downturn, growth in real gross domestic product ("GDP") slowed to 1.7% in the fourth quarter of 2005.[25] While GDP growth is expected to be far more robust going forward, uncertainties over the durability and pace of the expansion continue to be impacted by overhanging government and trade deficits and higher energy prices. Continued conflict and instability in Iraq and the ongoing threat of terrorism also undermine consumer confidence and contribute to global economic uncertainty. These factors cause the outlook to remain tenuous, with persistent stock and bond price volatility providing tangible evidence of the uncertainties faced by the U.S. economy.

Q. How do these economic uncertainties affect natural gas companies?

A. Uncertainties over the extent and durability of the economic recovery have combined to heighten the risks faced by utilities. Stagnant economic growth would undoubtedly mean flat gas sales, while the potential for higher inflation and interest rates would place additional pressure on the adequacy of existing service rates. Meanwhile, continued conflict and instability in the Middle East, coupled with the aftermath of hurricanes Katrina and Rita, intensifies concerns over renewed volatility in oil and gas prices. While the economy may ultimately return to a path of steady growth and the volatility in the capital and energy markets may abate, the underlying

[25] Bureau of Economic Analysis, "Gross Domestic Product: Fourth Quarter 2005 (Final)," *News Release* (Mar. 30, 2006).

weaknesses now present cause considerable uncertainties to persist, which increase the risks faced by the natural gas industry.

III. CAPITAL STRUCTURE AND EMBEDDED COST OF DEBT

Q. What is the purpose of this section?

A. This section discusses the implications of capital structure on risk and rate of return, and then examines the capital structure ratios maintained by ONEOK and other LDCs, as well as other industry benchmarks. Based on these analyses, and considering recent developments with respect to ONEOK's capital structure, a mix of investor-supplied capital is then developed for use in calculating Kansas Gas Service's overall rate of return. In addition, the embedded cost applicable to the debt component of the capital structure is evaluated.

A. Principles

Q. What is the role of capital structure in setting a utility's rate of return?

A. Capital structure reflects the mix of capital – debt, preferred securities, and common equity – used to finance a utility's assets. The proportions of the total capitalization attributable to each source of capital are typically used to weight the costs of investor-supplied capital in calculating an overall rate of return.

Q. Why does this weighting matter?

A. The capital structure ratios determine how much weight is given to a particular source of capital. Because the costs of debt and preferred securities and the rate of return on common equity are not the same, this affects the weighted average cost, or overall rate of return, of all sources of capital.

Q. How does the use of greater amounts of debt and preferred stock affect the rates of return required by investors?

A. A higher debt ratio, or lower common equity ratio, translates into increased financial risk for all investors. A greater amount of debt, and preferred stock, means more investors have a senior claim on available cash flow, thereby reducing the certainty that each will receive his contractual payments. This, in turn, increases the risks to

which lenders and preferred stockholders are exposed, and they require a correspondingly higher rate of interest and dividends for their risk bearing. From common shareholders' perspective, higher debt and preferred stock ratios means that there are proportionately more investors ahead of them, thereby increasing the uncertainty as to the amount of cash flow, if any, that will remain. Again, in accordance with the fundamental risk-return tradeoff principle to be discussed in greater detail later, shareholders require a correspondingly higher rate of return to compensate them for bearing the greater financial risk associated with a lower equity ratio.

B. Capital Structure Ratios

Q. What sources of investor-supplied capital are used to finance Kansas Gas Service's gas distribution operations?

A. Kansas Gas Service's utility operations are an operating division of ONEOK and, as such, have no independent financing, relying entirely on capital supplied from the general funds of ONEOK.

Q. What capitalization was reflected on ONEOK's balance sheet at test year-end?

A. At December 31, 2005, the capital structure reflected on ONEOK's balance sheet was as follows ($ 000s):

Capital Component	Amount	%
Long-term Debt	$2,030,616	53.0828%
Common Equity	1,794,757	46.9172%
Total	$3,825,374	100.0000%

Q. Do the ratios above provide a reasonable basis on which to evaluate Kansas Gas Service's capital structure?

A. No. Adjustments to ONEOK's long-term debt outstanding at test-year end were required to remove financing specifically associated with the acquisition of facilities at Fort Bliss, Texas and Fort Sill, Oklahoma, as well as the impact of interest rate swap agreements. In addition, included on ONEOK's balance sheet at December 31, 2005 was $402.3 million in Equity Units, which were issued in January 2003 in connection with the repurchase of its Series A Convertible Preferred Stock, formerly

held by Westar Energy. These equity units consisted of 4.0% senior notes due 2008 and an equity purchase contract, bearing a 4.5% quarterly contract adjustment payment, and carrying an obligation for the holders to purchase ONEOK common stock. Under the provisions of the equity units, the common stock purchase obligation was to be accomplished through surrender of the senior notes, which were remarketed at a rate of 5.51% in November 2005. Proceeds from this remarketing were used to fulfill the equity unit holders' purchase obligation, which resulted in the issuance of approximately 19.5 million shares of ONEOK common stock and suspension of the equity units on February 16, 2006.[26]

Q. What capital structure is indicated for ONEOK after adjusting for these items?

A. These adjustments to ONEOK's capital structure are shown on Schedule WEA-1. As summarized below, this resulted in an indicated capital structure consisting of approximately 47.5% long-term debt and 52.5% common equity:

Capital Component	Amount	%
Long-term Debt	$1,989,802	47.5233%
Common Equity	2,197,205	52.4767%
Total	$4,187,007	100.0000%

Q. How can ONEOK's capital structure be evaluated?

A. It is generally accepted that the norms established by comparable firms provide one valid benchmark against which to evaluate the reasonableness of a utility's capital structure. The capital structure maintained by other gas distribution companies should reflect their collective efforts to finance themselves so as to minimize capital costs while preserving their financial integrity and ability to attract capital. Moreover, these industry capital structures should also incorporate the requirements of investors, both debt and equity, as well as the influence of regulators.

[26] The common equity nature of ONEOK's Equity Units has previously been recognized by the investment community and regulators. For example, Moody's considered 75% of the outstanding balance as common equity, while Staff witness Adam Gatewood testified in Docket No. 03-KANSAS GAS SERVICEG-602-RTS that the Equity Units have "conversion features" that are "tied to the common stock" and concluded that "the third party will have to analyze the prospects for ONEOK's common stock in making its decision" to purchase the Equity Units. Accordingly, in lieu of a specific adjustment to the test year-end capital structure to recognize the subsequent suspension of the Equity Units, these securities should be treated as common equity.

Q. What capitalization ratios are maintained by other LDCs?

A. Schedule WEA-2 presents capital structure ratios for a group of fourteen publicly traded LDCs included in Value Line's Natural Gas (Distribution) industry. Excluded from the group was one firm followed by Value Line that does not pay common dividends (SEMCO Energy) and another that is in the process of being acquired (KeySpan Corp.). As shown there, for the firms in the LDC proxy group, common equity ratios at fiscal year-end 2005 ranged from 36.2% to 62.5% and averaged 50.1%.

Q. What implication does the increasing risk of the utility industry have for the capital structures maintained by utilities?

A. The challenges imposed by the evolving structural changes in the industry imply that utilities will be required to incorporate relatively greater amounts of equity in their capital structures. Moody's noted early on that utilities must adopt a more conservative financial posture if credit ratings are to be maintained:

> "The key issue," says the analysts in a recent special comment, "is that the competitive industries have much lower operating and financial leverage and that utilities must streamline both in order to be effective competitors." Analysts say the utilities must do this in order to post stronger financial indicators and maintain their current ratings level.[27]

As shown on Schedule WEA-2, Value Line expects that the average common equity ratio for the proxy group of LDCs will increase to 53.6% over the next three to five years. A more conservative financial profile is consistent with increasing uncertainties and the imperative of maintaining continuous access to the capital required to fund operations and necessary system investment, even during times of adverse capital market conditions.

Q. How does ONEOK's adjusted common equity ratio compare with those maintained by the reference group of LDCs?

A. ONEOK's adjusted common equity ratio of approximately 52.5% is entirely consistent with the range of capitalizations currently maintained by other LDCs.

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[27] Moody's Investors Service, *Credit Risk Commentary*, p. 3 (July 29, 1996).

Meanwhile, ONEOK's adjusted equity ratio falls slightly short of the 53.8% equity ratio based on Value Line's expectations for these gas distribution utilities over the near-term.

Q. How does ONEOK's capital structure compare with other widely cited financial benchmarks for a utility's capital structure?

A. The financial ratio guidelines published by S&P specify a range for a utility's total debt ratio that corresponds to each specific bond rating. Widely cited in the investment community, these ratios are viewed in conjunction with a utility's *business profile* ranking, which ranges from 1 (strong) to 10 (weak) depending on a utility's relative business risks. Thus, S&P's guideline financial ratios for a given rating category (e.g., single-A) vary with the business or operating risk of the utility. In other words, a firm with a *business profile* of "2" (*i.e.*, relatively lower business risk) could presumably employ more financial leverage than a utility with a business profile assessment of "9" while maintaining the same credit rating. The average S&P *business profile* ranking for the firms in the LDC proxy group is "3", with the vast majority of these firms being assigned a rank in range of "2" to "4".

S&P's guideline financial ratio benchmarks for a utility's capital structure are presented in the form of total debt ratios. Consistent with S&P's current ratings criteria and an S&P *business profile* rank in the 2-4 range, a ratio of total debt to total capital falling between 45% and 58% is specified for a single-A bond rating.[28]

Q. What specific investor-supplied capital structure ratios do you recommend be used to calculate the rate of return for Kansas Gas Service's gas distribution operations?

A. I recommend using a representative mix of investor-supplied capital consistent with ONEOK's test year-end capital structure, as adjusted, of approximately 47.5% long-term debt and 52.5% common equity. Based on my evaluation, I concluded that this represents a reasonable mix of capital sources from which to calculate the overall rate of return for Kansas Gas Service's gas distribution operations. ONEOK's adjusted common equity ratio is consistent with the range of capitalizations currently maintained by the proxy group of LDCs, and falls slightly below the average

[28] Standard & Poor's Corporation, *Corporate Ratings Criteria* (2005) at Table 5.

projected for these other gas distribution companies. Moreover, the debt ratio of 47.5% implied by ONEOK's adjusted capital structure falls within, albeit at the low end of, the guidelines specified by S&P for a single-A rated LDC.

C. Embedded Cost of Debt

Q. What is the average embedded cost associated with the debt component of Kansas Gas Service's capital structure?

A. After making the adjustments described earlier, ONEOK had a balance of approximately $2.0 billion in long-term debt outstanding at test year-end December 31, 2005, as adjusted. This balance is composed primarily of long-term notes payable due between 2008 and 2035, with the interest rates attributable to each specific issue being detailed in Schedule WEA-3. Besides interest expense, ONEOK necessarily incurs various issuance-related costs in connection with securing debt capital. Although these costs are capitalized and amortized over the life of the corresponding debt issue, none is included in Kansas Gas Service's rate base or operating expenses. Accordingly, as shown on Schedule WEA-3, dividing the total annual cost by the gross amount outstanding for ONEOK's debt issues produced an average cost of debt for Kansas Gas Service of 6.2354%.

Q. What is the nature of the amounts shown in the "Loss on Reacquired" column reflected on Schedule WEA-3?

A. This column reflects direct administrative and legal costs, compensation to securities underwriters, as well as premiums associated with redeeming outstanding debt issues. In order to exercise call privileges that allow a corporation to retire existing debt before the scheduled maturity date, bond indentures typically require the issuer to pay an amount greater than the par value of the bonds. These redemption premiums represent a reasonable and necessary cost incurred to secure the savings associated with replacing higher-cost debt with bonds paying lower interest rates.

IV. RATE OF RETURN ON COMMON EQUITY

Q. What is the purpose of this section?

A. In this section, a fair rate of return on common equity for Kansas Gas Service is developed. First, I examine the concept of the cost of equity, along with the risk-return tradeoff principle fundamental to capital markets. Next, DCF risk premium, and comparable earnings analyses are conducted to estimate the cost of equity for a reference group of gas distribution utilities, with the results of these methods being evaluated, along with other factors, to arrive at my recommended fair rate of return on common equity for Kansas Gas Service.

A. Economic Standards

Q. What role does the rate of return on common equity play in a utility's rates?

A. The return on common equity is the cost of inducing and retaining equity investment in the utility's physical plant and assets. This investment is necessary to finance the asset base needed to provide utility service. Competition for investor funds is intense and investors are free to invest their funds wherever they choose. They will commit money to a particular investment only if they expect it to produce a return commensurate with those from other investments with comparable risks. Moreover, the return on common equity is integral in achieving the sound regulatory objectives of rates that are sufficient to: 1) fairly compensate capital investment in the utility, 2) enable the utility to offer a return adequate to attract new capital on reasonable terms, and 3) maintain the utility's financial integrity. Meeting these objectives allows the utility to fulfill its obligation to provide reliable service while meeting the needs of customers through necessary system expansion.

Q. What fundamental economic principle underlies this cost of equity concept?

A. Unlike debt capital, there is no contractually guaranteed return on common equity capital since shareholders are the residual owners of the utility. Nonetheless, common equity investors still require a return on their investment, with the cost of equity being the minimum "rent" that must be paid for the use of their money. This cost of equity typically serves as the starting point for determining a fair rate of return on common equity.

Underlying the concept of the cost of equity is the fundamental notion that investors are risk averse, and will willingly bear additional risk only if they expect compensation for doing so. In capital markets where relatively risk-free assets are available (*e.g.*, U.S. Treasury securities) investors can be induced to hold more risky assets only if they are offered a premium, or additional return, above the rate of return on a risk-free asset. Since all assets compete with each other for investors' funds, more risky assets must yield a higher expected rate of return than less risky assets in order for investors to be willing to hold them.

Given this risk-return tradeoff, the required rate of return (k) from an asset (i) can be generally expressed as:

$$k_i = R_f + RP_i$$

where: R_f = Risk-free rate of return; and
RP_i = Risk premium required to hold risky asset i.

Thus, the required rate of return for a particular asset at any point in time is a function of: 1) the yield on risk-free assets, and 2) its relative risk, with investors demanding correspondingly larger risk premiums for assets bearing greater risk.

Q. Is there evidence that the risk-return tradeoff principle actually operates in the capital markets?

A. Yes. The risk-return tradeoff is readily observable in certain segments of the capital markets where required rates of return can be directly inferred from market data and generally accepted measures of risk exist. Bond yields, for example, reflect investors' expected rates of return, and bond ratings measure the risk of individual bond issues. The observed yields on government securities, which are considered free of default risk, and bonds of various rating categories demonstrate that the risk-return tradeoff does, in fact, exist in the capital markets.

Q. Is this risk-return tradeoff limited to differences between firms?

A. No. The risk-return tradeoff principle applies not only to investments in different firms, but also to different securities issued by the same firm. As discussed earlier, the securities issued by a utility vary considerably in risk because they have different characteristics and priorities. Long-term debt secured by a mortgage on property is

senior among all capital in its claim on a utility's net revenues and is therefore the least risky. Following first mortgage bonds are other debt instruments also holding contractual claims on the utility's cash flow, such as debentures and notes, followed by preference stockholders. The last investors in line are common shareholders. They only receive the cash flow, if any, that remains after all other claimants have been paid. As a result, the rate of return that investors require from a utility's common stock, the most junior and riskiest of its securities, is considerably higher than the yield on the utility's long-term debt.

Q. Is the cost of equity observable in the capital markets?

A. No. Unlike debt capital, there is no contractually guaranteed return on common equity capital since shareholders are the residual owners of the utility. Because it is unobservable, the cost of equity for a particular utility must be estimated by analyzing information about capital market conditions generally, assessing the relative risks of the company specifically, and employing various quantitative methods that focus on investors' current required rates of return. These various quantitative methods typically attempt to infer investors' required rates of return from stock prices, interest rates, or other capital market data.

Q. Did you rely on a single method to estimate the cost of equity for Kansas Gas Service?

A. No. In my opinion, no single method or model should be relied upon to determine a utility's cost of equity because no single approach can be regarded as wholly reliable. As the FCC recognized:

> Equity prices are established in highly volatile and uncertain capital markets... Different forecasting methodologies compete with each other for eminence, only to be superceded by other methodologies as conditions change... In these circumstances, we should not restrict ourselves to one methodology, or even a series of methodologies, that would be applied mechanically. Instead, we conclude that we should adopt a more accommodating and flexible position.[29]

Therefore, I used both the DCF model and risk premium methods to estimate the cost of equity. In addition, I also evaluated a fair rate of return using a comparable

[29] Federal Communications Commission, Report and Order 42-43, CC Docket No. 92-133 (1995).

earnings approach based on investors' current expectations in the capital markets. In my opinion, comparing estimates produced by one method with those produced by other approaches ensures that the estimates of the cost of equity pass fundamental tests of reasonableness and economic logic.

B. Discounted Cash Flow Analyses

Q. How are DCF models used to estimate the cost of equity?

A. The use of DCF models is essentially an attempt to replicate the market valuation process that sets the price investors are willing to pay for a share of a company's stock. The model rests on the assumption that investors evaluate the risks and expected rates of return from all securities in the capital markets. Given these expected rates of return, the price of each stock is adjusted by the market until investors are adequately compensated for the risks they bear. Therefore, we can look to the market to determine what investors believe a share of common stock is worth. By estimating the cash flows investors expect to receive from the stock in the way of future dividends and capital gains, we can calculate their required rate of return. In other words, the cash flows that investors expect from a stock are estimated, and given its current market price, we can "back-into" the discount rate, or cost of equity, that investors presumptively used in bidding the stock to that price.

Q. What market valuation process underlies DCF models?

A. DCF models are derived from a theory of valuation which assumes that the price of a share of common stock is equal to the present value of the expected cash flows (i.e., future dividends and stock price) that will be received while holding the stock, discounted at investors' required rate of return, or the cost of equity. Notationally, the general form of the DCF model is as follows:

$$P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \cdots + \frac{D_t}{(1+k_e)^t} + \frac{P_t}{(1+k_e)^t}$$

where: P_0 = Current price per share;
P_t = Expected future price per share in period t;
D_t = Expected dividend per share in period t;
k_e = Cost of equity.

That is, the cost of equity is the discount rate that will equate the current price of a share of stock with the present value of all expected cash flows from the stock.

Q. Has this general form of the DCF model customarily been used to estimate the cost of equity in rate cases?

A. No. In an effort to reduce the number of required estimates and computational difficulties, the general form of the DCF model has been simplified to a "constant growth" form. But converting the general form of the DCF model to the constant growth DCF model requires a number of strict assumptions. These include:

- A constant growth rate for both dividends and earnings;
- A stable dividend payout ratio;
- The discount rate exceeds the growth rate;
- A constant growth rate for book value and price;
- A constant earned rate of return on book value;
- No sales of stock at a price above or below book value;
- A constant price-earnings ratio;
- A constant discount rate (i.e., no changes in risk or interest rate levels and a flat yield curve); and,
- All of the above extend to infinity.

Given these assumptions, the general form of the DCF model can be reduced to the more manageable formula of:

$$P_0 = \frac{D_1}{k_e - g}$$

where: g = Investors' long-term growth expectations.

The cost of equity (K_e) can be isolated by rearranging terms:

$$k_e = \frac{D_1}{P_0} + g$$

This constant growth form of the DCF model recognizes that the rate of return to stockholders consists of two parts: 1) dividend yield (D_1/P_0), and 2) growth (g). In other words, investors expect to receive a portion of their total return in the form of current dividends and the remainder through price appreciation.

Q. Are the assumptions underlying the constant growth form of the DCF model met in the real world?

A. In practice, none of the assumptions required to convert the general form of the DCF model to the constant growth form are ever strictly met. Nevertheless, where earnings are derived from stable activities, and earnings, dividends, and book value track fairly closely, the constant growth form of the DCF model offers a reasonable working approximation of stock valuation that provides useful insight as to investors' required rate of return.

Q. How did you implement the DCF model to estimate the cost of equity for Kansas Gas Service?

A. As described above, application of the DCF model to estimate the cost of equity requires an observable stock price. Because Kansas Gas Service is an operating division of ONEOK and has no publicly traded stock, its cost of equity cannot be estimated directly using the DCF model. As an alternative, the cost of equity for an untraded firm is often estimated by applying the DCF model to publicly traded companies engaged in similar business activities. In order to reflect the risks and prospects associated with Kansas Gas Service's jurisdictional gas utility operations, my DCF analyses focused on the same group of fourteen publicly traded natural gas distribution companies identified earlier.

Q. How is the constant growth form of the DCF model typically used to estimate the cost of equity?

A. The first step in implementing the constant growth DCF model is to determine the expected dividend yield (D_1/P_0) for the firm in question. This is usually calculated based on an estimate of dividends to be paid in the coming year divided by the current price of the stock. The second, and more controversial, step is to estimate investors' long-term growth expectations (g) for the firm. Since book value, dividends, earnings, and price are all assumed to move in lock-step in the constant growth DCF model, estimates of expected growth are sometimes derived from historical rates of growth in these variables under the presumption that investors expect these rates of growth to continue into the future. Alternatively, a firm's internal growth can be estimated based on the product of its earnings retention ratio and

earned rate of return on equity. This growth estimate may rely on either historical or projected data, or both. A third approach is to rely on security analysts' projections of growth as proxies for investors' expectations. The final step is to sum the firm's dividend yield and estimated growth rate to arrive at an estimate of its cost of equity.

Q. How was the dividend yield for the reference group of LDCs determined?

A. Estimates of dividends to be paid by each of these natural gas utilities over the next twelve months, obtained from Value Line, served as D_1. This annual dividend was then divided by the corresponding stock price for each utility to arrive at the expected dividend yield. The expected dividends, stock price, and resulting dividend yields for the firms in the gas distribution proxy group are presented on Schedule WEA-4. As shown there, dividend yields for the fourteen firms in the LDC group ranged from 1.7% to 6.0%, with the average being 4.0%.

Q. What are investors most likely to consider in developing their long-term growth expectations?

A. In constant growth DCF theory, earnings, dividends, book value, and market price are all assumed to grow in lockstep and the growth horizon of the DCF model is infinite. But implementation of the DCF model is more than just a theoretical exercise; it is an attempt to replicate the mechanism investors used to arrive at observable stock prices. Thus, the only "*g*" that matters in applying the DCF model is the one investors expect and have embodied in current market prices. While the uncertainties inherent with common stock make estimating investors' growth expectations a difficult task for any company, in the case of LDCs, the problem is exacerbated due to the unsettled conditions associated with the natural gas industry.

Q. Are historical dividend growth rates likely to provide a meaningful guide to investors' growth expectations for gas utilities?

A. No. In response to more accentuated business risks in the industry, utilities adopted dividend policies that were much more conservative than in the past. As a result, dividend growth in the utility industry has remained largely stagnant in recent years as utilities conserved financial resources to provide a hedge against heightened uncertainties. This change in LDC financial policies was noted by S&P:

> Utilities have traditionally paid out a large portion of their earnings to shareholders in the form of dividends. In the near term, however, we expect distributors' dividend hikes to be slimmer than in the past: between 2% and 4% annually over the next few years. One reason is that companies want to keep their payout ratios (dividend payments as a percentage of earnings) below the historical norm of 65% to 75%, in order to gain flexibility for meeting the challenges of a more competitive marketplace.[30]

Q. What about projected dividend growth rates?

A. As the industry recovers from the financial challenges of the last several years, some utilities have begun to reevaluate their dividend policies and reinstate increases to their quarterly payout. While investors have recently expressed renewed interest in dividend payments, Value Line's most recent forecast indicates projected dividend growth rates of 2.0% or less for seven of the fourteen firms in the proxy group.[31] Growth rates of 2.0% or less, when combined with a 4.0% average dividend yield, imply a cost of equity that is less than the yields available on less risky public utility bonds. Such nonsensical results provide little guidance as to investors' expectations for the LDC proxy group.

Q. What other trends do investors consider in developing growth expectations?

A. Trends in earnings, which ultimately support future dividends and share prices, are likely to play a pivotal role in determining investors' long-term growth expectations. Indeed, the importance of earnings in evaluating investors' expectations and requirements is well accepted in the investment community. As noted in *Finding Reality in Reported Earnings* published by the Association for Investment Management and Research:

> [E]arnings, presumably, are the basis for the investment benefits that we all seek. "Healthy earnings equal healthy investment benefits" seems a logical equation, but earnings are also a scorecard by which we compare companies, a filter through which we assess management, and a crystal ball in which we try to foretell the future.[32]

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[30] Standard & Poor's Corporation, *Industry Surveys: Natural Gas Distribution*, p. 6 (November 29, 2001).

[31] The Value Line Investment Survey (Mar. 17, 2006).

[32] Association for Investment Management and Research, "Finding Reality in Reported Earnings: An Overview", p. 1 (December 4, 1996).

Value Line's near-term projections and its Timeliness Rank, which is the principal investment rating assigned to each individual stock, are also based primarily on various quantitative analyses of earnings. As Value Line explained:

> The future earnings rank accounts for 65% in the determination of relative price change in the future; the other two variables (current earnings rank and current price rank) explain 35%.[33]

The fact that investment advisory services, such as Value Line and I/B/E/S International, Inc. (IBES), focus on projected growth in earnings indicates that the investment community regards this measure as a better indicator of future long-term growth than historical data or other near-term projections. Indeed, *Financial Analysts Journal* reported the results of a survey conducted to determine what analytical techniques investment analysts actually use.[34] Respondents were asked to rank the relative importance of earnings, dividends, cash flow, and book value in analyzing securities. Of the 297 analysts that responded, only 3 ranked dividends first while 276 ranked it last. The article concluded that:

> Earnings and cash flow are considered far more important than book value and dividends.[35]

Q. What are security analysts currently projecting in the way of earnings growth for the firms in the reference group of LDCs?

A. The consensus earnings growth projections for each of the firms in the LDC proxy group reported by IBES and published in S&P's Earnings Guide are shown on Schedule WEA-5. Also presented are the earnings growth projections reported by Value Line and Zacks Investment Research (Zacks). As shown on Schedule WEA-5, these security analysts' projections resulted in the following average growth rates for the reference group of gas distribution firms:

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[33] The Value Line Investment Survey, *Subscriber's Guide*, p. 53.

[34] Block, Stanley B., "A Study of Financial Analysts: Practice and Theory", *Financial Analysts Journal* (July/August 1999).

[35] *Id.* at 88.

LDC Proxy Group

Service	Growth Rate
Value Line	6.1%
I/B/E/S	5.4%
Zacks	5.5%

Additionally, Zacks reported an average consensus growth rate estimate for the natural gas distribution industry as a whole of 7.2% for the next five years.

Q. What other earnings growth rates might be relevant in assessing investors' current expectations for gas distribution utilities?

A. Short-term projected growth rates may be colored by lingering uncertainties regarding the near-term direction of the economy in general and the spate of challenges faced by utilities specifically. Consider the example of Value Line, which has assigned its Utilities sector the lowest ranking of all 10 sectors it covers for year-ahead stock price performance.[36] Value Line also noted that "[t]he Natural Gas Distribution Industry is ranked near the bottom of the *Value Line* universe for Timeliness."[37] While this cautious outlook may be indicative of relatively low near-term growth projections, it does not necessarily reflect investors' long-term expectations for the industry.

Given the unsettled conditions in the economy and gas utility industry over the near-term, historical growth in earnings might also provide a meaningful guide to investors' future expectations. Accordingly, earnings growth rates for the past 10- and 5-year periods reported by Value Line for the firms in the LDC proxy group are also presented on Schedule WEA-5. As shown there, 10-year historical earnings growth rates for the group of fourteen LDCs averaged 6.0%, or 8.6% over the most recent 5-year period.[38]

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[36] The Value Line Investment Survey, *Selection & Opinion* (Feb. 3, 2006) at 1303.

[37] The Value Line Investment Survey (Dec. 16, 2005) at 459.

[38] Value Line reported negative five-year historical growth rates for two of the LDCs in the proxy group. In the context of the DCF model, negative growth rates imply a cost of equity lower than the utility's dividend yield and below the cost of less risky debt. Accordingly, these illogical values provide no meaningful guide to investors' future expectations and were eliminated.

Q. How else are investors' expectations of future long-term growth prospects often estimated for use in the constant growth DCF model?

A. Based on the assumptions underlying constant growth theory, conventional applications of the constant growth DCF model often examine the relationships between retained earnings and earned rates of return as an indication of the sustainable growth investors might expect from the reinvestment of earnings within a firm. The sustainable growth rate is calculated by the formula, g = br + sv, where "b" is the expected retention ratio, "r" is the expected earned return on equity, "s" is the percent of common equity expected to be issued annually as new common stock, and "v" is the equity accretion rate.

Q. What is the purpose of the "sv" term?

A. Under DCF theory, the "sv" factor is a component of the growth rate designed to capture the impact of issuing new common stock at a price above, or below, book value. When a company's stock price is greater than its book value per share, the per-share contribution in excess of book value associated with new stock issues will accrue to the current shareholders. This addition to book value per share leads to higher expected earnings and dividends, with the "sv" factor incorporating this additional growth component.

Q. What growth rate does the earnings retention method suggest for the reference group of LDC firms?

A. The sustainable, "br + sv" growth rates for each firm in the proxy group are shown on Schedule WEA-6. For each firm, the expected retention ratio (b) was calculated based on Value Line's projected dividends and earnings per share. Likewise, each firm's expected earned rate of return (r) was computed by dividing projected earnings per share by projected net book value. Because Value Line reports end-of-year book values, an adjustment was incorporated to compute an average rate of return over the year, consistent with the theory underlying this approach to estimating investors' growth expectations. Meanwhile, the percent of common equity expected to be issued annually as new common stock (s) was equal to the product of the projected market-to-book ratio and growth in common shares outstanding, while the equity accretion rate (v) was computed as 1 minus the inverse of the projected market-to-

book ratio. As shown there, this method resulted in an average expected growth rate for the group of LDCs of 6.0%.

Q. What did you conclude with respect to investors' growth expectations for the reference group of LDCs?

A. Based on the growth projections discussed above, I concluded that investors currently expect growth on the order of 6.0 to 7.0% for the average firm in the LDC group.

Q. What cost of equity was implied for the reference group of LDCs using the DCF model?

A. Combining the 4.0% average dividend yield with the 6.5% midpoint of the representative growth rate range implied a cost of equity for this group of gas distribution utilities on the order of 10.5%.

Q. Do you believe this single DCF result should be relied on exclusively to evaluate a reasonable ROE for the proxy group of LDCs or Kansas Gas Service?

A. No. As I noted earlier, because the cost of equity is unobservable, no single method should be viewed in isolation. While the DCF model has been routinely relied on in regulatory proceedings as one guide to investors' required return, it is a blunt tool that should never be used exclusively, and regulators have customarily considered the results of alternative approaches in determining allowed returns. The need to consider alternative methods is especially important where the results of one approach deviate significantly from cost of equity estimates produced by other applications. Indeed, as discussed subsequently, the results of alternative risk premium methods suggest a cost of equity far in excess of this single DCF value.

Moreover, as noted earlier, the near-term projected growth rates typically used to apply the DCF model may be colored by a short-term "hangover" associated with lingering economic and industry uncertainties, as exemplified by Value Line's relatively pessimistic rankings for the utility sector. As a result of this cautious near-term outlook, DCF growth rates do not necessarily capture investors' long-term expectations for the industry, and the resulting cost of equity estimates will be

downward biased. Accordingly, it would be unreasonable to establish an ROE based only on this single DCF result.

Q. Are there any alternatives to the constant growth DCF model?

A. Yes, there are. Recall that the constant growth form is a simplified version of the general DCF model:

$$P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \cdots + \frac{D_t}{(1+k_e)^t} + \frac{P_t}{(1+k_e)^t}$$

The general, or multi-stage form of the DCF model can be used to estimate the cost of equity by substituting projections for a firm's future dividends (D_t) and price (P_t) for the variables in the equation, and imputing the cost of equity (K_e) by equating the future cash flows to the current stock price (P_0).

Q. Did you apply the multi-stage DCF model to estimate the cost of equity for the proxy group?

A. Yes. I applied the multi-stage DCF model to the fourteen LDCs in the proxy group using a five-year holding period (2006-2010). Dividends (D_t) during this holding period were based on Value Line's forecasts of 2006, 2007, and 2009-2011 dividends, with values for intervening years being interpolated. Future stock price (P_t) for each gas utility was calculated by multiplying Value Line's forecast of 2009-2011 earnings per share by the current trailing price/earnings ratio. Thus, rather than focusing on book values or sustainable, "retention" growth, the terminal stock price at the end of the holding period was based on two variables that are widely reported and referenced by investors in the analysis of common stocks – earnings per share and price/earnings ratios. The cost of equity was then estimated by imputing the discount rate necessary to equate the projected dividends and stock price to the recent price (P_0) reported by Value Line for each of the fourteen LDCs.

Q. What cost of equity was implied by this application of the multi-stage DCF model?

A. Exhibit WEA-7 contains the details of the multi-stage DCF calculations. As shown there, cost of equity estimates produced by this application of the multi-stage DCF model averaged 10.6%.

C. Risk Premium Analyses

Q. What other analyses did you conduct to estimate the cost of equity?

A. As I have mentioned previously, because the cost of equity is inherently unobservable, no single method should be considered a solely reliable guide to investors' required rate of return. Accordingly, I also evaluated the cost of equity for Kansas Gas Service using risk premium methods. My applications of the risk premium method provide alternative approaches to measure equity risk premiums that focused specifically on data for gas utilities and forward-looking estimates of investors' required rates of return.

Q. Briefly describe the risk premium method.

A. The risk premium method of estimating investors' required rate of return extends to common stocks the risk-return tradeoff observed with bonds. The cost of equity is estimated by first determining the additional return investors require to forgo the relative safety of bonds and to bear the greater risks associated with common stock, and then adding this equity risk premium to the current yield on bonds. Like the DCF model, the risk premium method is capital market oriented. However, unlike DCF models, which indirectly impute the cost of equity, risk premium methods directly estimate investors' required rate of return by adding an equity risk premium to observable bond yields.

Q. How did you implement the risk premium method?

A I based my estimates of equity risk premiums for gas distribution utilities on (1) surveys of previously authorized rates of return on common equity, (2) realized rates of return; and (3) alternative applications of the Capital Asset Pricing Model (CAPM).

Authorized returns presumably reflect regulatory commissions' best estimates of the cost of equity, however determined, at the time they issued their final order, and the returns provide a logical basis for estimating equity risk premiums. Such returns should represent a balanced and impartial outcome that considers the need to maintain a utility's financial integrity and ability to attract capital. Moreover, allowed returns are an important consideration for investors and have the potential to influence other observable investment parameters, including credit ratings and

borrowing costs. Thus, this data provides a logical and frequently referenced basis for estimating equity risk premiums.

Under the realized-rate-of-return approach, equity risk premiums are calculated by measuring the rate of return (including dividends, interest, and capital gains and losses) actually realized on an investment in common stocks and bonds over historical periods. The realized rate of return on bonds is then subtracted from the return earned on common stocks to measure equity risk premiums.

The CAPM approach measures the market-expected return for a security as the sum of a risk-free rate and a risk premium based on the portion of a security's risk that cannot be eliminated by holding a well-diversified portfolio. Under the CAPM, risk is represented by the beta coefficient (β), which measures the volatility of a security's price relative to the market at a whole. While beta is not without controversy, the CAPM is routinely referenced in the financial literature and in regulatory proceedings.

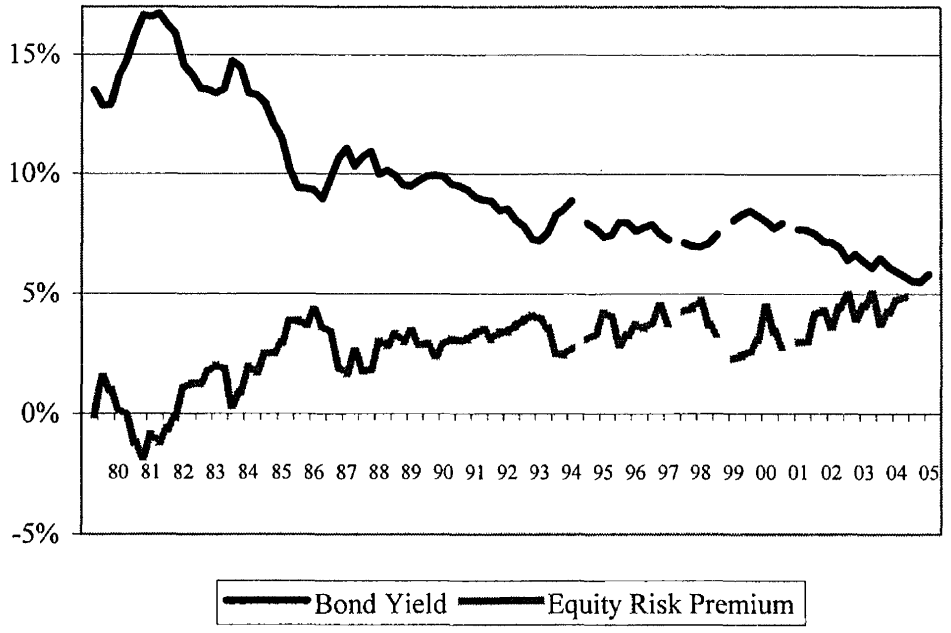
Q. How did you implement the risk premium approach using surveys of allowed rates of return?

A. While the purest form of the survey approach would involve querying investors directly, surveys of previously authorized rates of return on common equity are frequently referenced as the basis for estimating equity risk premiums. The rates of return on common equity authorized gas utilities by regulatory commissions across the U.S. are compiled by Regulatory Research Associates (RRA) and published in its *Regulatory Focus* report. In Schedule WEA-8, the average yield on public utility bonds is subtracted from the average allowed rate of return on common equity for natural gas utilities to calculate equity risk premiums for each quarter between 1980 and the fourth quarter of 2005. Over this 26-year period, these equity risk premiums for gas utilities averaged 2.86%, and the yield on single-A public utility bonds averaged 9.64%.

Q. Is there any risk premium behavior that needs to be considered when implementing the risk premium method?

A. Yes. There is considerable evidence that the magnitude of equity risk premiums is not constant and that equity risk premiums tend to move inversely with interest rates.

In other words, when interest rate levels are relatively high, equity risk premiums narrow, and when interest rates are relatively low, equity risk premiums widen. To illustrate, the graph below plots the yields on single-A public utility bonds (solid line) and equity risk premiums (shaded line) shown on Schedule WEA-8:



The graph clearly illustrates that the higher the level of interest rates, the lower the equity risk premium, and vice versa. The implication of this inverse relationship is that the cost of equity does not move as much as, or in lockstep with, interest rates. Accordingly, for a 1% increase or decrease in interest rates, the cost of equity may only rise or fall by about 50 basis points. Therefore, when implementing the risk premium method, adjustments may be required to incorporate this inverse relationship if current interest rate levels have changed since the equity risk premiums were estimated.

Q. What cost of equity is implied by surveys of allowed rates of return on equity?

A. As illustrated above, the inverse relationship between interest rates and equity risk premiums is evident. Based on a regression between the interest rates and equity risk premiums on Schedule WEA-8, the equity risk premium for gas utilities increased approximately 47 basis points for each percentage point drop in the yield on average public utility bonds. As illustrated on page 1 of Schedule WEA-8, with

the yield on single-A public utility bonds in March 2006 being 366 basis points lower than the average for the study period, this implied a current equity risk premium of 4.59% for gas utilities. Adding this equity risk premium to the 5.89% average yield on single-A public utility bonds for March 2006 produces a current cost of equity of approximately 10.6%.

Q. What else should be considered in applying the risk premium method?

A. As discussed earlier, there is widespread consensus that interest rates will increase, with the Fed's recent actions indicative of tighter credit conditions and higher long-term interest rates in the years ahead. As a result, current bond yields are likely to understate capital market requirements at the time the outcome of this proceeding becomes effective. Accordingly, in addition to the use of current bond yields, I also applied the alternative risk premium methods using forecasted bond yields for 2007, based on an average of the projections published by GlobalInsight, EIA, and Blue Chip.[39]

Q. What cost of equity was produced by the authorized rate of return approach after incorporating the 2007 bond yield forecast?

A. As shown on page 2 of Schedule WEA-8, incorporating a forecasted yield for 2007 and adjusting for changes in interest rates since the study period implied a current equity risk premium of 4.30% for gas distribution utilities. Adding this equity risk premium to the implied yield on single-A public utility bonds for 2007 of 6.6% resulted in an implied cost of equity of approximately 10.9%.

Q. How did you apply the realized-rate-of-return approach?

A. Widely used in academia, the realized-rate-of-return approach is based on the assumption that, given a sufficiently large number of observations over long historical periods, average realized market rates of return will converge to investors' required rates of return. From a more practical perspective, investors may base their expectations of future earned returns on those realized in the past, with average realized rates of return for historical periods being widely reported in the financial

[39] An analogous approach using forecasted interest rates was adopted by the staff of the Florida Public Service Commission ("FPSC") in a May 20, 2004 *Memorandum* in Docket No. 040006-WS and in the testimony of FPSC staff witness Andrew L. Maurey in Docket No. 000824-EI (Jan. 2002).

press and by investment advisory services as a guide to future performance. By focusing on data for utilities specifically, my realized rate of return approach avoided the need to make assumptions regarding relative risk (*e.g.*, beta) that are often embodied in applications of this method.

Stock price and dividend data for a group of natural gas distribution utilities are published in Moody's *Public Utility Manual*. Schedule WEA-9 presents annual realized rates of return for these gas distribution utilities in each year between 1952 and 2005. As shown there, over this 50-plus year period realized rates of return for these utilities have exceeded those on single-A public utility bonds by an average of 4.44%. In contrast to other risk premium approaches, the realized-rate-of-return method assumes that equity risk premiums are stationary over time; therefore, no adjustment for the inverse relationship between equity risk premiums and interest rates was made. Adding this 4.44% equity risk premium to the March 2006 average yield of 5.98% on single-A utility bonds produced a current cost of equity for the LDC proxy group of approximately 10.4%.

Once again, however, this does not consider the anticipated increase in bond yields over the coming year. As shown on page 2 of Schedule WEA-9, adding the 4.44% equity risk premium to the 6.6% forecasted single-A public utility bond yield for 2007 implied a cost of equity of approximately 11.0%.

Q. Please describe your application of the CAPM.

A. The CAPM is a theory of market equilibrium that measures risk using the beta coefficient. Under the CAPM, investors are assumed to be fully diversified, so the relevant risk of an individual asset (e.g., common stock) is its volatility relative to the market as a whole. Beta reflects the tendency of a stock's price to follow changes in the market. A stock that tends to respond less to market movements has a beta less than 1.00, while stocks that tend to move more than the market have betas greater than 1.00. The CAPM is mathematically expressed as:

$$R_j = R_f + \beta_j (R_m - R_f)$$

Where: R_j = required rate of return for stock *j*;

R_f = risk-free rate;

R_m = expected return on the market portfolio; and,

β_j = beta, or systematic risk, for stock *j*.

I applied the CAPM to the fourteen companies in the LDC proxy group using market risk premiums (R_m - R_f) based on (1) forward-looking estimates of investors' required rates of return and (2) historical realized rates of return.

Q. Please describe your forward-looking application of the CAPM.

A. Application of the CAPM to the utilities in the proxy group based on a forward-looking estimate for investors' required rate of return from common stocks is presented on Schedule WEA-10. Rather than using historical data, the expected market rate of return was estimated by conducting a DCF analysis on the 369 dividend paying firms in the S&P 500, with each firm's dividend yield and growth rate being weighted by its proportionate share of total market value.[40]

The dividend yield for each firm was obtained from Value Line, with the growth rate being equal to the average of the earnings growth projections for each firm published by I/B/E/S and Value Line. Based on the weighted average of the projections for the 369 individual firms, current estimates imply an average growth rate over the next five years of 11.3%. Combining this average growth rate with a dividend yield of 2.1% results in a current cost of equity estimate for the market as a whole of approximately 13.4%. Subtracting a 4.9% risk-free rate based on the average yield on 20-year Treasury bonds for March 2006 produced a market equity risk premium of 8.5%. Multiplying this risk premium by the average Value Line beta of 0.83 for the LDCs in the proxy group, and then adding the resulting 7.0% risk premium to the average long-term Treasury bond yield, resulted in a current cost of equity of approximately 11.9%.

[40] This is analogous to the approach relied on by the Illinois Commerce Commission Staff in Docket No. 96-0486 (*Testimony of Joy Nicdao-Cuyygan*).

Q. What cost of equity is implied by this forward-looking application of the CAPM after incorporating projected government bond yields for 2006?

A. As shown on page 2 of Schedule WEA-10, interest rate projections published by EIA, GlobalInsight and Blue Chip imply a projected yield on 20-year Treasury bonds of 5.3% for 2007, which resulted in a market risk premium of 8.1%. Once again multiplying the market risk premium by the average Value Line beta of 0.83 for the LDCs in the proxy group, and then adding the resulting 6.7% risk premium to the 5.3% long-term Treasury bond yield for 2007, implied a cost of equity of approximately 12.0%.

Q. What other CAPM analyses did you conduct to estimate the cost of equity?

A. I also applied the CAPM using risk premiums based on historical realized rates of return. This approach to estimating investors' equity risk premiums is premised on the assumption that, given a sufficiently large number of observations over long, historical periods, average realized market rates of return will converge to investors' required rates of return.

Q. What CAPM cost of equity is produced based on historical realized rates of return for stocks and long-term government bonds?

A. I applied the CAPM using data published by Ibbotson Associates, which is perhaps the most exhaustive and widely referenced annual study of realized rates of return. Application of the CAPM based on historical realized rates of return is presented in Schedule WEA-11. I applied the CAPM using data published by Ibbotson Associates, which is perhaps the most exhaustive and widely referenced annual study of realized rates of return. In their *2005 Yearbook, Valuation Edition*, Ibbotson Associates reported that, over the period from 1926 through 2004, the arithmetic mean realized rate of return on the S&P 500 exceeded that on long-term government bonds by 7.2%.[41] Multiplying this historical market risk premium by the average

[41] Ibbotson Associates computes the equity risk premium by subtracting the income return (not the total return) on long-term Treasury bonds from the return on common stocks. As Ibbotson Associates noted [*2005 Yearbook, Valuation Edition* at 75]:

> Price changes in bonds due to unanticipated changes in yields introduce price risk into the total return. Therefore, the total return on the bond series does not represent the riskless rate of return. The income return better represents the unbiased

Value Line beta of 0.83 produced an equity risk premium of 5.9% for the LDC proxy group. As shown on page 1 of Schedule WEA-11, adding this equity risk premium to the March 2006 average yield on 20-year Treasury bonds of 4.9% resulted in an implied cost of equity of 10.8%. As shown on page 2 of Schedule WEA-11, after incorporating 2007 projected government bond yields, application of the CAPM based on historical realized rates of return implied a cost of equity of 11.2%.

Q. What else should be considered in applying the CAPM using historical realized rates of return?

A. The CAPM model, like the DCF approach, is an *ex-ante*, or forward-looking model based on expectations of the future. As a result, in order to accurately estimate required returns the CAPM must be applied using data that reflects the expectations of actual investors. While reference to historical data represents one way to apply the CAPM, these realized rates of return reflect, at best, an indirect estimate of investors' current requirements. As a result, applications of the CAPM that look directly at investors' expectations in the capital markets are apt to provide a more meaningful guide to investors' required rate of return. Accordingly, because the historical approach does not incorporate forward-looking estimates, it was given less weight in arriving at my recommended return on equity.

D. Comparable Earnings Method

Q. What other benchmarks did you develop to evaluate the cost of equity for Kansas Gas Service?

A. As I noted earlier, I also evaluated the cost of equity using the comparable earnings method. Reference to rates of return available from alternative investments of comparable risk can provide an important benchmark in assessing the return necessary to assure confidence in the financial integrity of a firm and its ability to attract capital. This comparable earnings approach is consistent with the economic underpinnings for a fair rate of return established by the Supreme Court. Moreover, it avoids the complexities and limitations of capital market methods and instead

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estimate of the purely riskless rate of return, since an investor can hold a bond to maturity and be entitled to the income return with no capital loss.

focuses on the returns earned on book equity, which are readily available to investors.

Q. What rates of return on equity are indicated for gas distribution utilities based on this approach?

A. With respect to expectations for LDCs specifically, the most recent edition of Value Line reports that its analysts anticipate an average rate of return on common equity for the firms in its Natural Gas (Distribution) Industry group of 12.0% from 2006 through the end of its 2009-2011 forecast horizon,[42] with Value Line noting that allowed rates of return for LDCs are "typically between 10% and 12%."[43]

Q. Can the comparable earnings method be applied to other firms of similar risk?

A. Yes. Under the regulatory standards established by *Hope* and *Bluefield*, the salient criteria in establishing a meaningful benchmark to evaluate a fair rate of return is relative risk, not the particular business activity or degree of regulation. Utilities must compete for capital, not just against firms in their own industry, but with other investment opportunities of comparable risk. Consistent with this accepted regulatory standard, I also applied the comparable earnings approach based on a reference group of companies in the unregulated sector of the economy.

My assessment of comparable risk relied on two objective benchmarks for the risks associated with common stocks -- Value Line's Safety Rank and beta. The Safety Rank, which ranges from "1" (Safest) to "5" (Riskiest), is intended to capture the total risk of a stock, and incorporates elements of stock price stability and financial strength. As discussed earlier, Value Line's beta values provide a measure of stock price variability as compared with the firms in the New York Stock Exchange Composite Index, with a beta less than 1.0 indicating that a stock tends to fluctuate less than the market as a whole (lower risk) while a beta greater than 1.0 indicates that the stock tends to fluctuate more than the market (greater risk).

The average Value Line Safety Ranking for the firms in the proxy group is "2", with beta values for the fourteen LDCs averaging 0.83. Accordingly, my reference

[42] The Value Line Investment Survey (Mar. 17, 2006) at 458.

[43] The Value Line Investment Survey (Dec. 16, 2005) at 459.

group was composed of those U.S. companies followed by Value Line that 1) pay common dividends, 2) have a Safety Rank of "2", and 3) have beta values between 0.75 and 0.95. Value Line's projections indicate that its analysts expect that rates of return on shareholders' equity for the resulting group of 110 firms will average 15.5%, with the median being 13.5%.[44]

Q. What ROE benchmark is indicated by the results of the comparable earnings approach?

A. Based on the results discussed above, I concluded that the comparable earnings approach implies a fair rate of return on equity of at least 12.0%.

E. Other Factors

Q. What other considerations are relevant in setting a utility's allowed rate of return on common equity?

A. The common equity used to finance utility assets is provided from either the sale of stock in the capital markets or from retained earnings not paid out as dividends. When equity is raised through the sale of common stock, there are costs associated with "floating" the new equity securities. These flotation costs include services such as legal, accounting, and printing, as well as the fees and discounts paid to compensate brokers for selling the stock to the public. Also, some argue that the "market pressure" from the additional supply of common stock and other market factors may further reduce the amount of funds a utility nets when it issues common equity.

Q. Is there an established mechanism for a utility to recognize common equity flotation costs?

A. No. While debt flotation costs are recorded on the books of the utility and amortized over the life of the issue, serving to increase the effective cost of debt capital, there is no similar accounting treatment to ensure that common equity flotation costs are recorded and ultimately recognized. Alternatively, no rate of return is authorized on flotation costs that are necessary to obtain a portion of the common equity capital

[44] www.valueline.com (Retrieved Apr. 21, 2006).

used to finance plant. In other words, equity flotation costs are not included in a utility's rate base since neither that portion of the gross proceeds from the sale of common stock used to pay flotation costs is available to invest in plant and equipment, nor are flotation costs capitalized as an intangible asset. Even though there is no accounting convention to accumulate and amortize the flotation costs associated with past common equity issues, flotation costs are a necessary expense of obtaining equity capital. Unless some provision is made to recognize these past issuance costs, a utility's revenue requirements will not fully reflect all of the costs incurred for the use of investors' funds.

Q. How can common equity flotation costs be recognized in revenue requirements?

A. While there is no direct mechanism to recognize equity flotation costs, the most logical method to reflect these expenditures is through an upward adjustment to the "bare-bones" cost of equity. There are any number of ways in which a flotation cost adjustment can be calculated, with the adjustment ranging from just a few basis points to more than a full percent. One of the most commonly used methods involves applying an average flotation cost expense percentage to a utility's dividend yield. Based on a review of the finance literature, *Regulatory Finance: Utilities' Cost of Capital* concluded:

> The flotation cost allowance requires an estimated adjustment to the return on equity of approximately 5% to 10%, depending on the size and risk of the issue.[45]

Applying these expense percentages to a representative dividend yield for a utility of 4.0% implies a flotation cost adjustment on the order of 20 to 40 basis points.

Q. Is the need for a flotation cost adjustment to compensate for past equity issues recognized in the financial literature?

A. Yes. In a *Public Utilities Fortnightly* article, Brigham, Aberwald, and Gapenski demonstrated that even if no further stock issues are contemplated, a flotation cost adjustment in all future years is required to keep shareholders whole, and that the

[45] Morin, Roger A., *Regulatory Finance: Utilities' Cost of Capital*, Public Utilities Reports (1994) at 166.

flotation cost adjustment must consider total equity, including retained earnings.[46] Similarly, *Regulatory Finance: Utilities' Cost of Capital* contains the following discussion:

> Another controversy is whether the underpricing allowance should still be applied when the utility is not contemplating an imminent common stock issue. Some argue that flotation costs are real and should be recognized in calculating the fair rate of return on equity, but only at the time when the expenses are incurred. In other words, the flotation cost allowance should not continue indefinitely, but should be made in the year in which the sale of securities occurs, with no need for continuing compensation in future years. This argument implies that the company has already been compensated for these costs and/or the initial contributed capital was obtained freely, devoid of any flotation costs, which is an unlikely assumption, and certainly not applicable to most utilities. ... The flotation cost adjustment cannot be strictly forward-looking unless all past flotation costs associated with past issues have been recovered.[47]

Q. Can you provide a simple numerical example illustrating why a flotation cost adjustment is necessary to account for past flotation costs?

A. Yes. The following example demonstrates that investors will not have the opportunity to earn their required rate of return (*i.e.*, dividend yield plus expected growth) unless an allowance for past flotation costs is included in the allowed rate of return on equity. Assume a utility sells $10 worth of common stock at the beginning of year 1. If the utility incurs flotation costs of $0.48 (5% of the net proceeds), then only $9.52 is available to invest in rate base. Assume that common shareholders' required rate of return is 11.25%, the expected dividend in year 1 is $0.50 (*i.e.*, a dividend yield of 5%), and that growth is expected to be 6.25% annually. As developed below, if the allowed rate of return on common equity is only equal to the utility's 11.25% "bare bones" cost of equity, common stockholders will not earn their required rate of return on their $10 investment, since growth will really only be 6.00%, instead of 6.25%:

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[46] Brigham, E.F., Aberwald, D.A., and Gapenski, L.C., "Common Equity Flotation Costs and Rate Making," *Public Utilities Fortnightly* (May, 2, 1985).

[47] Morin, Roger A., *Regulatory Finance: Utilities' Cost of Capital*, Public Utilities Reports (1994) at 175.

Year	Common Stock	Retained Earnings	Total Equity	Market Price	M/B Ratio	Allowed ROE	Earnings Per Share	Dividends Per Share	Payout Ratio
1	$ 9.52	$ -	$ 9.52	$10.00	1.050	11.25%	$ 1.07	$ 0.50	46.7%
2	$ 9.52	$ 0.57	$10.09	$10.60	1.050	11.25%	$ 1.14	$ 0.53	46.7%
3	$ 9.52	$ 0.61	$10.70	$11.24	1.050	11.25%	$ 1.20	$ 0.56	46.7%
Growth			6.00%	6.00%			6.00%	6.00%	

The reason that investors never really earn 11.25% on their investment in the above example is that the $0.48 in flotation costs initially incurred to raise the common stock is not treated like debt issuance costs (*i.e.*, amortized into interest expense and therefore increasing the embedded cost of debt), nor is it included as an asset in rate base.

Q. Can you illustrate how the flotation cost adjustment allows investors to be fully compensated for the impact of past issuance costs?

A. Yes. As discussed earlier, one method for calculating the flotation cost adjustment is to multiply the dividend yield by a flotation cost percentage. Thus, with a 5% dividend yield and a 5% flotation cost percentage, the flotation cost adjustment in the above example would be approximately 25 basis points. As shown below, by allowing a rate of return on common equity of 11.50% (an 11.25% cost of equity plus a 25 basis point flotation cost adjustment), investors earn their 11.25% required rate of return, since actual growth is now equal to 6.25%:

Year	Common Stock	Retained Earnings	Total Equity	Market Price	M/B Ratio	Allowed ROE	Earnings Per Share	Dividends Per Share	Payout Ratio
1	$ 9.52	$ -	$ 9.52	$10.00	1.050	11.50%	$ 1.10	$ 0.50	45.7%
2	$ 9.52	$ 0.60	$10.12	$10.63	1.050	11.50%	$ 1.16	$ 0.53	45.7%
3	$ 9.52	$ 0.63	$10.75	$11.29	1.050	11.50%	$ 1.24	$ 0.56	45.7%
Growth			6.25%	6.25%			6.25%	6.25%	

The only way for investors to be fully compensated for past flotation costs is to include an ongoing adjustment to account for these costs when setting the return on common equity. This is the case regardless of whether or not the utility is expected to issue additional shares of common stock in the future. Accordingly, I recommend a flotation cost adjustment of 25 basis points, which is within the range supported by the financial literature. Similarly, Staff witness Adam H. Gatewood recently recommended a flotation cost allowance of 25 basis points in testimony

before the KCC in Docket No. 05-WSEE-981-RTS, noting that "the Commission has accepted this adjustment in the past when utilities requested it."[48]

Q. What other factors did you consider in your evaluation of a fair rate of return on equity for Kansas Gas Service?

A. A WNA was approved for Kansas Gas Service beginning December 2000.[49] A WNA moderates the impact of extreme weather on customers and, at the same time, dampens the volatility of Kansas Gas Service's revenues. Accordingly, the WNA would be expected to reduce the risks faced by Kansas Gas Service. Similarly, Kansas Gas Service and its customers benefit from other mechanisms that attenuate operating uncertainties, such as fluctuations in ad valorem taxes and bad debt expenses.

Q. Given the reduction in business risk associated with a WNA, what would be the expected impact on investors' required rate of return?

A. As with flotation costs, determining the precise amount that a WNA may impact the cost of equity is problematic. While a WNA is generally viewed favorably by the investment community, it is not likely to have a dramatic impact on the utility's overall investment risk and, in turn, cost of capital. This was recognized by S&P:

> All else being equal, S&P would consider the same utility a better credit risk with a weather normalization mechanism than without one. In most cases, this would not mean a higher rating, but a stronger position among utilities within the same rating category.[50]

Similarly, Moody's observed that:

> All other factors being equal, it is better to have rather than *not* have some form of mitigation against warmer than normal weather, although as LDCs evaluate the effectiveness and reliability of their weather mitigants they must also consider the cost/benefit factors.

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[48] *Direct Testimony of Adam H. Gatewood*, Docket No. 05-WSEE-981-RTS (Sep. 2005) at 2 and 43.

[49] Order Granting Joint Motion and Approving Stipulation and Agreement, Docket No. 01-KANSAS GAS SERVICEG-229-TAR (October 27, 2000).

[50] Standard & Poor's Corporation, "Weather Normalization: Positive for Gas Distributors", *CreditWeek* (May 27, 1991).

> ...[T]he mere use of weather mitigants does not ensure a high credit rating or protect against possible future downgrades...[51]

While the bond rating agencies certainly recognize the value of a WNA in reducing earnings volatility, it is only one of many factors considered by investors in evaluating a gas distribution utility's total investment risks. In other words, investors recognize that the existence or absence of a WNA alone does not alter the risk of an LDC enough to warrant a change in its bond rating. Thus, any impact that a WNA might have on an LDC's cost of equity would be measured in just basis, not percentage, points.

Q. What else is relevant evaluating the impact of adjustment mechanisms for weather or other operating factors on investors' required rate of return?

A. First, the investment community recognizes that virtually all of the fourteen LDCs in the proxy group used to estimate the cost of equity examined earlier have some form of weather mitigant, including adjustment clauses, insurance, or rate design features that make the LDC less susceptible to variations in gas consumption due to weather. Indeed, nine of the fourteen LDCs in the proxy group examined earlier already have similar weather adjustment clauses or weather insurance, while others have rate design features (*e.g.* demand charges) that make the LDC less susceptible to variations in gas consumption due to weather. Similarly, the proxy group of gas utilities also benefits from other adjustment mechanisms that moderate a variety of operating risks. As a result, the reduced risk is already accounted-for in my cost of equity estimates. Any downward adjustment to a cost of equity that already did not compensate investors for exposure to the added volatility of abnormal weather or other operating risks would result in a "double-dip". This finding is consistent with the KCC's recent order in Docket No. 05-WSEE-981-RTS, where the Commission recognized the need to consider risk mitigation measures already in-place for proxy group companies when establishing the ROE.[52]

Second, WNAs are not viewed as entirely positive by the investment community. This is because, while a WNA dampens the volatility of an LDCs

[51] Moody's Investors Service, "Negative Rating Trend For Local Gas Distribution Companies: Impact of Diversification And Warm Weather", *Special Comment* (October 2002).

[52] *Order on Rate Applications*, Docket No. 05-WSEE-981-RTS (Dec. 28, 2005) at 110.

revenues, it also largely precludes the prospects of exceptional earnings due to colder than normal weather. This double-edged sword associated with WNAs was noted by S&P:

> Some LDCs are reluctant to pursue such provisions, because they don't want to forego the upside earnings potential of a significantly colder-than-normal winter.[53]

Thus, any reduction in the cost of equity due to lower risk would be partially offset by an increase in investors' required rate of return to compensate for the loss of upside potential.

Q. Why is it important to allow Kansas Gas Service an adequate rate of return on equity?

A. Given the social and economic importance of the utility industry, it is essential to maintain reliable and economical service to all consumers. Providing the infrastructure necessary to meet the energy needs of customers is certainly desirable, but it imposes additional financial responsibilities on incumbent utility suppliers, such as Kansas Gas Service. While Kansas Gas Service remains committed to deliver reliable service, a utility's ability to fulfill its mandate can be compromised if it lacks the necessary financial wherewithal. For a utility with an obligation to provide reliable service, investors' increased reticence to supply additional capital during times of adverse capital market conditions highlights the necessity of preserving the flexibility. To continue to meet potential challenges successfully and economically, it is crucial that Kansas Gas Service receive adequate support for its credit standing.

Q. Do customers also benefit by enhancing the utility's financial flexibility?

A. Yes. While providing an ROE that is sufficient to maintain Kansas Gas Service's ability to attract capital, even under duress, is consistent with the economic requirements embodied in the Supreme Court's *Hope* and *Bluefield* decisions, it is also in customers' best interests. Ultimately, it is customers and the service area economy that enjoy the benefits that come from ensuring that the utility has the financial wherewithal to take whatever actions are required to ensure delivery of a

[53] Standard & Poor's Corporation, "Natural Gas Distribution", *Industry Surveys*, p. 18 (November 29, 2001).

reliable energy supply. By the same token, customers also bear a significant burden when the ability of the utility to attract necessary capital is impaired and service quality is compromised.

Q. What role does regulation play in ensuring Kansas Gas Service's access to capital?

A. Considering investors' heightened awareness of the risks associated with the utility industry and the damage that results when a utility's financial flexibility is compromised, supportive regulation remains crucial to Kansas Gas Service's access to capital. Investors recognize that constructive regulation is a key ingredient in supporting utility credit ratings and financial integrity, particularly during times of adverse conditions. S&P noted that:

> When examining the quality of regulation, Standard & Poor's factors in what level of support the utility might get in times of distress, when its needs are most acute.[54]

More recently, S&P concluded that "[c]ontinued regulatory support is paramount to credit quality for LDCs," especially in light of continued high and volatile natural gas prices.[55]

F. Summary and Conclusions

Q. Please summarize the findings of the various quantitative analyses you performed to estimate the cost of equity.

A. The cost of equity for Kansas Gas Service was estimated by applying both the DCF model and premium methods to a group of fourteen publicly traded LDCs, as well as by reference to expected earned returns for firms of comparable risk. The cost of equity estimates implied by these quantitative analyses are summarized in the table below:

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[54] Standard & Poor's Corporation, "Regulation and Credit Quality in the U.S. Utility Sector," *RatingsDirect* (Jan. 30, 2003).

[55] Standard & Poor's Corporation, "Prolonged High Natural Gas Prices May Increase Credit Risk for U.S. Gas Distributors," *RatingsDirect* (Jan. 19, 2005).

Method	Cost of Equity Estimate
DCF	
Constant Growth	10.5%
Multi-Stage	10.6%
Risk Premium	
Authorized Returns	
Current Yield	10.6%
Projected Yield	10.9%
Realized Rates of Return	
Current Yield	10.4%
Projected Yield	11.0%
CAPM - Forward-looking	
Current Yield	11.9%
Projected Yield	12.0%
CAPM - Historical	
Current Yield	10.8%
Projected Yield	11.2%
Comparable Earnings	12.0%

Q. What then is your conclusion as to the cost of equity for Kansas Gas Service?

A. In light of anticipated capital market trends and lingering industry uncertainties, caution should be exercised in interpreting the results of DCF and risk premium applications. As noted earlier, DCF estimates should not be viewed in isolation, especially considering the potential for downward bias when DCF growth rates do not capture investors' long-term expectations. Moreover, expectations for higher interest rates suggest that 2007 estimates should receive more weight.

Accordingly, based on the results of my quantitative analyses, and my assessment of the relative strengths and weaknesses inherent in each method, I concluded that the cost of equity for the LDC proxy group is in the 10.5% to 11.5% range. After incorporating an adjustment for flotation costs of 25 basis points to my "bare bones" cost of equity range, I concluded that a fair rate of return on equity for the proxy group of utilities is currently in the 10.75% to 11.75% range. Based on the midpoint of this range, I conclude that the cost of equity for Kansas Gas Service is presently 11.25%.

V. OVERALL RATE OF RETURN

Q. What overall rate of return do you recommend be applied to the rate base of Kansas Gas Service?

A. I recommend an overall rate of return of approximately 8.87%. As developed below, this overall rate of return is the result of combining the capital structure developed earlier with the costs of debt and non-investor-supplied capital discussed previously, and an 11.25% rate of return on common equity:

Capital Component	Percent of Total	Component Cost	Weighted Cost
Long-term Debt	47.5233%	6.2354%	2.9633%
Common Equity	52.4767%	11.2500%	5.9036%
Total	100.0000%		8.8669%

Q. Does this conclude your direct testimony in this case?

A. Yes, it does.

VERIFICATION

STATE OF TEXAS)
) ss.
COUNTY OF TRAVIS)

William E. Avera, being duly sworn upon his oath, deposes and states that he is a principal in Financial Concepts and Application, Inc.; that he has read and is familiar with the foregoing Direct Testimony filed herewith; and that the statements made therein are true to the best of his knowledge, information, and belief.

WILLIAM E. AVERA

Subscribed and sworn to before me this 4th day of May 2006.

NOTARY PUBLIC

My appointment Expires:

12/31/2006

ADRIEN MCKENZIE
MY COMMISSION EXPIRES
December 31, 2009
BONDED BY
NOTARY ASSOC. OF TEXAS, INC.

APPENDIX A

QUALIFICATIONS OF WILLIAM E. AVERA

WILLIAM E. AVERA

FINCAP, INC.
Financial Concepts and Applications
Economic and Financial Counsel

3907 Red River
Austin, Texas 78751
(512) 458–4644
FAX (512) 458–4768
fincap@texas.net

Summary of Qualifications

Ph.D. in economics and finance; Chartered Financial Analyst (CFA ®) designation; extensive expert witness testimony before courts, alternative dispute resolution panels, regulatory agencies and legislative committees; lectured in executive education programs around the world on ethics, investment analysis, and regulation; undergraduate and graduate teaching in business and economics; appointed to leadership positions in government, industry, academia, and the military.

Employment

Principal, FINCAP, Inc. (Sep. 1979 to present)	Financial, economic and policy consulting to business and government. Perform business and public policy research, cost/benefit analyses and financial modeling, valuation of businesses (over 100 entities valued), estimation of damages, statistical and industry studies. Provide strategy advice and educational services in public and private sectors, and serve as expert witness before regulatory agencies, legislative committees, arbitration panels, and courts.
Director, Economic Research Division, Public Utility Commission of Texas (Dec. 1977 to Aug. 1979)	Responsible for research and testimony preparation on rate of return, rate structure, and econometric analysis dealing with energy, telecommunications, water and sewer utilities. Testified in major rate cases and appeared before legislative committees and served as Chief Economist for agency. Administered state and federal grant funds. Communicated frequently with political leaders and representatives from consumer groups, media, and investment community.
Manager, Financial Education, International Paper Company New York City (Feb. 1977 to Nov. 1977)	Directed corporate education programs in accounting, finance, and economics. Developed course materials, recruited and trained instructors, liaison within the company and with academic institutions. Prepared operating budget and designed financial controls for corporate professional development program.

Lecturer in Finance,
The University of Texas at Austin
(Sep. 1979 to May 1981)
Assistant Professor of Finance,
(Sep. 1975 to May 1977)

Taught graduate and undergraduate courses in financial management and investment theory. Conducted research in business and public policy. Named Outstanding Graduate Business Professor and received various administrative appointments.

Assistant Professor of Business,
University of North Carolina at Chapel Hill
(Sep. 1972 to Jul. 1975)

Taught in BBA, MBA, and Ph.D. programs. Created project course in finance, Financial Management for Women, and participated in developing Small Business Management sequence. Organized the North Carolina Institute for Investment Research, a group of financial institutions that supported academic research. Faculty advisor to the Media Board, which funds student publications and broadcast stations.

Education

Ph.D., Economics and Finance,
University of North Carolina at Chapel Hill
(Jan. 1969 to Aug. 1972)

Elective courses included financial management, public finance, monetary theory, and econometrics. Awarded the Stonier Fellowship by the American Bankers' Association and University Teaching Fellowship. Taught statistics, macroeconomics, and microeconomics.

Dissertation: *The Geometric Mean Strategy as a Theory of Multiperiod Portfolio Choice*

B.A., Economics,
Emory University, Atlanta, Georgia
(Sep. 1961 to Jun. 1965)

Active in extracurricular activities, president of the Barkley Forum (debate team), Emory Religious Association, and Delta Tau Delta chapter. Individual awards and team championships at national collegiate debate tournaments.

Professional Associations

Received Chartered Financial Analyst (CFA) designation in 1977; Vice President for Membership, Financial Management Association; President, Austin Chapter of Planning Executives Institute; Board of Directors, North Carolina Society of Financial Analysts; Candidate Curriculum Committee, Association for Investment Management and Research; Executive Committee of Southern Finance Association; Vice Chair, Staff Subcommittee on Economics and National Association of Regulatory Utility Commissioners (NARUC); Appointed to NARUC Technical Subcommittee on the National Energy Act.

Teaching in Executive Education Programs

University-Sponsored Programs: Central Michigan University, Duke University, Louisiana State University, National Defense University, National University of Singapore, Texas A&M University, University of Kansas, University of North Carolina, University of Texas.

Business and Government-Sponsored Programs: Advanced Seminar on Earnings Regulation, American Public Welfare Association, Association for Investment Management and Research, Congressional Fellows Program, Cost of Capital Workshop, Electricity Consumers Resource Council, Financial Analysts Association of Indonesia, Financial Analysts Review, Financial Analysts Seminar at Northwestern University, Governor's Executive Development Program of Texas, Louisiana Association of Business and Industry, National Association of Purchasing Management, National Association of Tire Dealers, Planning Executives Institute, School of Banking of the South, State of Wisconsin Investment Board, Stock Exchange of Thailand, Texas Association of State Sponsored Computer Centers, Texas Bankers' Association, Texas Bar Association, Texas Savings and Loan League, Texas Society of CPAs, Tokyo Association of Foreign Banks, Union Bank of Switzerland, U.S. Department of State, U.S. Navy, U.S. Veterans Administration, in addition to Texas state agencies and major corporations.

Presented papers for Mills B. Lane Lecture Series at the University of Georgia and Heubner Lectures at the University of Pennsylvania. Taught graduate courses in finance and economics in evening program at St. Edward's University in Austin from January 1979 through 1998.

Expert Witness Testimony

Testified in over 200 cases before regulatory agencies addressing cost of capital, rate design, and other economic and financial issues.

Federal Agencies: Federal Communications Commission, Federal Energy Regulatory Commission, Surface Transportation Board, Interstate Commerce Commission, and the Canadian Radio-Television and Telecommunications Commission.

State Regulatory Agencies: Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Idaho, Illinois, Indiana, Kansas, Maryland, Michigan, Missouri, Nevada, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Virginia, Washington, West Virginia, and Wisconsin.

Testified in over 30 cases before federal and state courts, arbitration panels, and alternative dispute tribunals (over 60 depositions given) regarding damages, valuation, antitrust liability, fiduciary duties, and other economic and financial issues.

Board Positions and Other Professional Activities

Audit Committee and Outside Director, Georgia System Operations Corporation (electric system operator for member-owned electric cooperatives in Georgia); Chairman, Board of Print Depot, Inc. and FINCAP, Inc.; Co-chair, Synchronous Interconnection Committee, appointed by Governor George Bush and Public Utility Commission of Texas; Operator of AAA Ranch, a certified organic producer of agricultural products; Appointed to Organic Livestock Advisory Committee by Texas Agricultural Commissioner Susan Combs; Appointed by Texas Railroad Commissioners to study group for *The UP/SP Merger: An Assessment of the Impacts on the State of Texas; A*ppointed by

Hawaii Public Utilities Commission to team reviewing affiliate relationships of Hawaiian Electric Industries; Chairman, Energy Task Force, Greater Austin-San Antonio Corridor Council; Consultant to Public Utility Commission of Texas on cogeneration policy and other matters; Consultant to Public Service Commission of New Mexico on cogeneration policy; Evaluator of Energy Research Grant Proposals for Texas Higher Education Coordinating Board.

Community Activities

Board Member, Sustainable Food Center; Chair, Board of Deacons, Finance Committee, and Elder, Central Presbyterian Church of Austin; Founding Member, Orange-Chatham County (N.C.) Legal Aid Screening Committee.

Military

Captain, U.S. Naval Reserve (retired after 28 years service); Commanding Officer, Naval Special Warfare Engineering Support Unit; Officer-in-charge of SWIFT patrol boat in Vietnam; Enlisted service as weather analyst (advanced to second class petty officer).

Bibliography

Monographs

Ethics and the Investment Professional (video, workbook, and instructor's guide) and *Ethics Challenge Today* (video), Association for Investment Management and Research (1995)

"Definition of Industry Ethics and Development of a Code" and "Applying Ethics in the Real World," in *Good Ethics: The Essential Element of a Firm's Success*, Association for Investment Management and Research (1994)

"On the Use of Security Analysts' Growth Projections in the DCF Model," with Bruce H. Fairchild in *Earnings Regulation Under Inflation*, J. R. Foster and S. R. Holmberg, eds. Institute for Study of Regulation (1982)

An Examination of the Concept of Using Relative Customer Class Risk to Set Target Rates of Return in Electric Cost-of-Service Studies, with Bruce H. Fairchild, Electricity Consumers Resource Council (ELCON) (1981); portions reprinted in *Public Utilities Fortnightly* (Nov. 11, 1982)

"Usefulness of Current Values to Investors and Creditors," *Research Study on Current-Value Accounting Measurements and Utility*, George M. Scott, ed., Touche Ross Foundation (1978)

"The Geometric Mean Strategy and Common Stock Investment Management," with Henry A. Latané in *Life Insurance Investment Policies*, David Cummins, ed. (1977)

Investment Companies: Analysis of Current Operations and Future Prospects, with J. Finley Lee and Glenn L. Wood, American College of Life Underwriters (1975)

Articles

"Should Analysts Own the Stocks they Cover?" *The Financial Journalist*, (March 2002)

"Liquidity, Exchange Listing, and Common Stock Performance," with John C. Groth and Kerry Cooper, *Journal of Economics and Business* (Spring 1985); reprinted by National Association of Security Dealers

"The Energy Crisis and the Homeowner: The Grief Process," *Texas Business Review* (Jan.–Feb. 1980); reprinted in *The Energy Picture: Problems and Prospects*, J. E. Pluta, ed., Bureau of Business Research (1980)

"Use of IFPS at the Public Utility Commission of Texas," *Proceedings of the IFPS Users Group Annual Meeting* (1979)

"Production Capacity Allocation: Conversion, CWIP, and One-Armed Economics," *Proceedings of the NARUC Biennial Regulatory Information Conference* (1978)

"Some Thoughts on the Rate of Return to Public Utility Companies," with Bruce H. Fairchild in *Proceedings of the NARUC Biennial Regulatory Information Conference* (1978)

"A New Capital Budgeting Measure: The Integration of Time, Liquidity, and Uncertainty," with David Cordell in *Proceedings of the Southwestern Finance Association* (1977)

"Usefulness of Current Values to Investors and Creditors," in *Inflation Accounting/Indexing and Stock Behavior* (1977)

"Consumer Expectations and the Economy," *Texas Business Review* (Nov. 1976)

"Portfolio Performance Evaluation and Long-run Capital Growth," with Henry A. Latané in *Proceedings of the Eastern Finance Association* (1973)

Book reviews in *Journal of Finance* and *Financial Review*. Abstracts for *CFA Digest*. Articles in *Carolina Financial Times*.

Selected Papers and Presentations

"The Who, What, When, How, and Why of Ethics", San Antonio Financial Analysts Society (Jan. 16, 2002). Similar presentation given to the Austin Society of Financial Analysts (Jan. 17, 2002)

"Ethics for Financial Analysts," Sponsored by Canadian Council of Financial Analysts: delivered in Calgary, Edmonton, Regina, and Winnipeg, June 1997. Similar presentations given to Austin Society of Financial Analysts (Mar. 1994), San Antonio Society of Financial Analysts (Nov. 1985), and St. Louis Society of Financial Analysts (Feb. 1986)

"Cost of Capital for Multi-Divisional Corporations," Financial Management Association, New Orleans, Louisiana (Oct. 1996)

"Ethics and the Treasury Function," Government Treasurers Organization of Texas, Corpus Christi, Texas (Jun. 1996)

"A Cooperative Future," Iowa Association of Electric Cooperatives, Des Moines (December 1995). Similar presentations given to National G & T Conference, Irving, Texas (June 1995), Kentucky Association of Electric Cooperatives Annual Meeting, Louisville (Nov. 1994), Virginia, Maryland, and Delaware Association of Electric Cooperatives Annual Meeting, Richmond (July 1994), and Carolina Electric Cooperatives Annual Meeting, Raleigh (Mar. 1994)

"Information Superhighway Warnings: Speed Bumps on Wall Street and Detours from the Economy," Texas Society of Certified Public Accountants Natural Gas, Telecommunications and Electric Industries Conference, Austin (Apr. 1995)

"Economic/Wall Street Outlook," Carolinas Council of the Institute of Management Accountants, Myrtle Beach, South Carolina (May 1994). Similar presentation given to Bell Operating Company Accounting Witness Conference, Santa Fe, New Mexico (Apr. 1993)

"Regulatory Developments in Telecommunications," Regional Holding Company Financial and Accounting Conference, San Antonio (Sep. 1993)

"Estimating the Cost of Capital During the 1990s: Issues and Directions," The National Society of Rate of Return Analysts, Washington, D.C. (May 1992)

"Making Utility Regulation Work at the Public Utility Commission of Texas," Center for Legal and Regulatory Studies, University of Texas, Austin (June 1991)

"Can Regulation Compete for the Hearts and Minds of Industrial Customers," Emerging Issues of Competition in the Electric Utility Industry Conference, Austin (May 1988)

"The Role of Utilities in Fostering New Energy Technologies," Emerging Energy Technologies in Texas Conference, Austin (Mar. 1988)

"The Regulators' Perspective," Bellcore Economic Analysis Conference, San Antonio (Nov. 1987)

"Public Utility Commissions and the Nuclear Plant Contractor," Construction Litigation Superconference, Laguna Beach, California (Dec. 1986)

"Development of Cogeneration Policies in Texas," University of Georgia Fifth Annual Public Utilities Conference, Atlanta (Sep. 1985)

"Wheeling for Power Sales," Energy Bureau Cogeneration Conference, Houston (Nov. 1985).

"Asymmetric Discounting of Information and Relative Liquidity: Some Empirical Evidence for Common Stocks" (with John Groth and Kerry Cooper), Southern Finance Association, New Orleans (Nov. 1982)

"Used and Useful Planning Models," Planning Executive Institute, 27th Corporate Planning Conference, Los Angeles (Nov. 1979)

"Staff Input to Commission Rate of Return Decisions," The National Society of Rate of Return Analysts, New York (Oct. 1979)

"Electric Rate Design in Texas," Southwestern Economics Association, Fort Worth (Mar. 1979)

"Discounted Cash Life: A New Measure of the Time Dimension in Capital Budgeting," with David Cordell, Southern Finance Association, New Orleans (Nov. 1978)

"The Relative Value of Statistics of Ex Post Common Stock Distributions to Explain Variance," with Charles G. Martin, Southern Finance Association, Atlanta (Nov. 1977)

"An ANOVA Representation of Common Stock Returns as a Framework for the Allocation of Portfolio Management Effort," with Charles G. Martin, Financial Management Association, Montreal (Oct. 1976)

"A Growth-Optimal Portfolio Selection Model with Finite Horizon," with Henry A. Latané, American Finance Association, San Francisco (Dec. 1974)

"An Optimal Approach to the Finance Decision," with Henry A. Latané, Southern Finance Association, Atlanta (Nov. 1974)

"A Pragmatic Approach to the Capital Structure Decision Based on Long-Run Growth," with Henry A. Latané, Financial Management Association, San Diego (Oct. 1974)

"Multi-period Wealth Distributions and Portfolio Theory," Southern Finance Association, Houston (Nov. 1973)

"Growth Rates, Expected Returns, and Variance in Portfolio Selection and Performance Evaluation," with Henry A. Latané, Econometric Society, Oslo, Norway (Aug. 1973)

ONEOK CAPITAL STRUCTURE

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Capital Component	Test Year-end December 31, 2005	Adjustments	Test Year Adjusted Amount	%
Long-term Debt	$2,030,616,405	$ (40,814,505) (a)	$1,989,801,900	47.5233%
Common Equity	$1,794,757,434	$402,447,500 (b)	$2,197,204,934	52.4767%
Total	$3,825,373,839		$4,187,006,834	100.0000%

(a) Remove impact of interest rate swaps ($37,414,265) and debt issues specifically attributable to the Fort Bliss and Fort Sill acquisitions ($

(b) Reflect the impact of the February 16, 2006 settlement of the Equity Units.

LDC INDUSTRY GROUP

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Page 1 of 1

CAPITAL STRUCTURE

	2005 (a)			Projected 2009-11 (b)		
Company	Long-term Debt	Preferred Stock	Common Equity	Long-term Debt	Preferred Stock	Common Equity
AGL Resources	51.2%	0.0%	48.8%	48.0%	0.0%	52.0%
Atmos Energy	57.8%	0.0%	42.3%	55.0%	0.0%	45.0%
Cascade Natural Gas	59.4%	0.0%	40.6%	51.0%	0.0%	49.0%
Laclede Group	47.2%	6.7%	51.8%	49.0%	0.0%	51.0%
New Jersey Resources	42.4%	0.0%	58.0%	36.5%	0.0%	63.5%
Nicor, Inc.	41.3%	0.0%	62.5%	34.0%	0.0%	66.0%
Northwest Natural Gas	47.8%	0.0%	53.0%	47.0%	0.0%	53.0%
Peoples Energy	52.8%	0.0%	47.2%	50.9%	0.0%	49.1%
Piedmont Natural Gas	43.7%	0.0%	58.6%	40.0%	0.0%	60.0%
South Jersey Industries	45.2%	0.0%	55.1%	40.0%	0.0%	60.0%
Southern Union	55.7%	5.9%	41.6%	48.5%	4.5%	47.0%
Southwest Gas	63.0%	4.8%	36.2%	56.5%	0.0%	43.5%
UGI Corp.	63.3%	0.0%	46.4%	47.5%	0.0%	52.5%
WGL Holdings	42.1%	1.9%	59.3%	39.0%	2.0%	59.0%
AVERAGE	**50.9%**	**1.4%**	**50.1%**	**45.9%**	**0.5%**	**53.6%**

(a) Company Form 10-K and Annual Reports.
(b) The Value Line Investment Survey (Mar. 17, 2006).

EMBEDDED COST OF LONG-TERM DEBT

Series	Gross Amount	Original Issuance Cost	Loss on Reacquired	Net Proceeds	Coupon Rate	Annual Interest	Effective Cost	Annual Cost
5.51% Note due 2008	402,302,500	3,289,011	0	399,013,489	5.510%	22,166,868	5.5554%	22,349,586
6.00% Note due 2009	100,000,000	1,004,079	0	98,995,921	6.000%	6,000,000	6.0609%	6,060,856
Libor + 1.25% Due 2009	2,332,400	45,838	0	2,286,562	5.640%	131,547	5.7531%	134,184
7.125% Note due 2011	400,000,000	3,101,075	0	396,898,925	7.125%	28,500,000	7.1807%	28,722,678
6.40% Note due 2019	92,921,000	4,713,016	0	88,207,984	6.400%	5,946,944	6.7420%	6,264,693
6.50% Note due 2028	92,246,000	4,933,653	11,317,451	75,994,896	6.500%	5,995,990	7.8900%	7,278,201
6.875% Note due 2028	100,000,000	1,801,559	11,296,041	86,902,400	6.875%	6,875,000	7.9112%	7,911,174
5.20% Note due 2015	400,000,000	3,189,387	0	396,810,613	5.200%	20,800,000	5.2418%	20,967,181
6.00% Note due 2035	400,000,000	4,865,387	0	395,134,613	6.000%	24,000,000	6.0739%	24,295,518
8.70% Note - called 12/1/99	--	--	2,321,378	--	--	--	--	87,538
Total debt capital	$1,989,801,900	$26,943,005	$24,934,870	$1,940,245,403		$120,416,349		$124,071,609

Embedded Cost of Long-term Debt **6.2354%**

DISCOUNTED CASH FLOW MODEL **Schedule WEA-4**
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DIVIDEND YIELD

Company	(a) Recent Price	(a) Div. Next 12 Mos.	Div. Yield
AGL Resources	$35.32	$1.50	4.2%
Atmos Energy	$26.40	$1.27	4.8%
Cascade Natural Gas	$19.27	$0.96	5.0%
Laclede Group	$34.11	$1.42	4.2%
New Jersey Resources	$44.19	$1.46	3.3%
Nicor, Inc.	$40.46	$1.87	4.6%
Northwest Natural Gas	$34.05	$1.39	4.1%
Peoples Energy	$36.26	$2.18	6.0%
Piedmont Natural Gas	$23.53	$0.96	4.1%
South Jersey Industries	$27.40	$0.93	3.4%
Southern Union	$24.15	$0.40	1.7%
Southwest Gas	$27.99	$0.82	2.9%
UGI Corp.	$21.91	$0.70	3.2%
WGL Holdings	$30.43	$1.35	4.4%
AVERAGE			**4.0%**

(a) The Value Line Investment Survey, *Summary and Index* (Mar. 17, 2006).

DISCOUNTED CASH FLOW MODEL **Schedule WEA-5**
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EARNINGS GROWTH RATES

	(a)	(b)	(c)	(a)	(a)
	Projected			**Historical**	
Company	**Value Line**	**IBES**	**Zacks**	**Past 10-Yr**	**Past 5-Yr**
AGL Resources	4.0%	5.0%	4.4%	6.5%	13.5%
Atmos Energy	7.0%	5.0%	5.5%	4.0%	6.5%
Cascade Natural Gas	8.5%	5.0%	NA	1.5%	NMF
Laclede Group	7.0%	5.0%	NA	2.5%	4.5%
New Jersey Resources	4.5%	5.0%	6.0%	7.5%	8.5%
Nicor, Inc.	4.0%	NA	5.0%	2.0%	NMF
Northwest Natural Gas	7.0%	5.0%	5.3%	2.5%	3.0%
Peoples Energy	0.5%	4.0%	4.0%	2.5%	1.0%
Piedmont Natural Gas	6.0%	5.0%	5.2%	5.5%	5.0%
South Jersey Industries	7.0%	6.0%	5.5%	8.0%	11.5%
Southern Union	14.5%	8.0%	7.7%	14.0%	18.5%
Southwest Gas	8.5%	NA	6.0%	4.0%	1.5%
UGI Corp.	5.5%	8.0%	7.3%	19.0%	24.0%
WGL Holdings	2.0%	4.0%	4.0%	4.5%	6.0%
AVERAGE	**6.1%**	**5.4%**	**5.5%**	**6.0%**	**8.6%**

NMF -- No Meaningful Figure
NA -- Not Available

(a) The Value Line Investment Survey (Mar. 17, 2006). Negative growth rates recorded as No
(b) Standard & Poor's Corporation, *Earnings Guide* (March 2006).
(c) Zacks Investment Research, www.zacks.com (Retrieved Apr. 6, 2006).

DISCOUNTED CASH FLOW MODEL

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Page 1 of 1

SUSTAINABLE GROWTH RATE

	(a)	(a)	(a)	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
	Projections 2009-11			2005		Mid-Year					
Company	EPS	DPS	Net Book Value	Net Book Value	Annual Change	Adjustment Factor	"b"	Adjusted "r"	"b x r" growth	"sv" Factor	Sustainable Growth
AGL Resources	$2.90	$1.75	$24.75	$19.29	5.1%	1.0249	39.7%	12.0%	4.8%	0.06%	4.82%
Atmos Energy	$2.50	$1.35	$24.10	$19.90	3.9%	1.0191	46.0%	10.6%	4.9%	1.54%	6.40%
Cascade Natural Gas	$1.55	$0.98	$18.60	$10.39	12.4%	1.0582	36.8%	8.8%	3.2%	0.63%	3.88%
Laclede Group	$2.80	$1.50	$22.30	$17.31	5.2%	1.0253	46.4%	12.9%	6.0%	1.45%	7.42%
New Jersey Resources	$3.30	$1.70	$25.15	$15.90	9.6%	1.0458	48.5%	13.7%	6.7%	-1.85%	4.80%
Nicor, Inc.	$2.80	$2.02	$21.40	$18.36	3.1%	1.0153	27.9%	13.3%	3.7%	0.21%	3.91%
Northwest Natural Gas	$2.85	$1.70	$25.55	$21.27	3.7%	1.0183	40.4%	11.4%	4.6%	0.17%	4.75%
Peoples Energy	$2.70	$2.24	$20.60	$20.95	-0.3%	0.9983	17.0%	13.1%	2.2%	2.53%	4.76%
Piedmont Natural Gas	$1.75	$1.17	$13.30	$11.53	2.9%	1.0143	33.1%	13.3%	4.4%	-0.73%	3.69%
South Jersey Industries	$2.30	$1.15	$17.50	$13.50	5.3%	1.0259	50.0%	13.5%	6.7%	0.97%	7.71%
Southern Union	$2.10	$0.50	$20.40	$13.70	8.3%	1.0398	76.2%	10.7%	8.2%	1.95%	10.11%
Southwest Gas	$2.30	$0.82	$22.45	$18.60	3.8%	1.0188	64.3%	10.4%	6.7%	2.50%	9.22%
UGI Corp.	$1.85	$0.81	$14.60	$9.52	8.9%	1.0427	56.2%	13.2%	7.4%	0.63%	8.06%
WGL Holdings	$2.40	$1.45	$21.30	$17.80	3.7%	1.0179	39.6%	11.5%	4.5%	0.03%	4.57%
Average											**6.0%**

(a) The Value Line Investment Survey (Mar. 17, 2006).
(b) Annual growth in book value per share from 2005 to 2009/11.
(c) Equal to 2(1+c)/(2+c), where c = annual growth in net book value.
(d) (EPS-DPS)/EPS.
(e) (EPS/2009-11 Net Book Value) x Mid-Year Adjustment Factor.
(f) (d) x (e).
(g) "s" equals projected market-to-book ratio x growth in common shares. "v" equals (1- 1/projected market-to-book ratio).
(h) (f) + (g).

DISCOUNTED CASH FLOW MODEL

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MULTI-STAGE DCF APPROACH

	(a)	(a)	(b)	(a)	(c)	(a)		(a)	(d)							(e)
		Projected Price 2009-11														Implied
	Recent	2005	Trailing	2009-11	Proj.	2006	2007	2009-11	Annual							Cost of
Company	Price	EPS	P/E	EPS	Price	Div.	Div.	Div.	Change	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	End Yr 5	Equity
AGL Resources	$35.32	$2.48	14.2	$ 2.90	$41.30	$1.50	$1.58	$1.75	$ 0.06	$1.13	$1.58	$1.64	$1.69	$1.75	$41.30	7.9%
Atmos Energy	$26.40	$1.72	15.3	$ 2.50	$38.37	$1.26	$1.28	$1.35	$ 0.02	$0.95	$1.28	$1.30	$1.33	$1.35	$38.37	12.8%
Cascade Natural Gas	$19.27	$0.82	23.5	$ 1.55	$36.43	$0.96	$0.96	$0.98	$ 0.01	$0.72	$0.96	$0.97	$0.97	$0.98	$36.43	18.7%
Laclede Group	$34.11	$1.90	18.0	$ 2.80	$50.27	$1.40	$1.42	$1.50	$ 0.03	$1.05	$1.42	$1.45	$1.47	$1.50	$50.27	12.4%
New Jersey Resources	$44.19	$2.65	16.7	$ 3.30	$55.03	$1.46	$1.52	$1.70	$ 0.06	$1.10	$1.52	$1.58	$1.64	$1.70	$55.03	8.1%
Nicor, Inc.	$40.46	$2.27	17.8	$ 2.80	$49.91	$1.86	$1.88	$2.02	$ 0.05	$1.40	$1.88	$1.93	$1.97	$2.02	$49.91	9.1%
Northwest Natural Gas	$34.05	$2.11	16.1	$ 2.85	$45.99	$1.38	$1.42	$1.70	$ 0.09	$1.04	$1.42	$1.51	$1.61	$1.70	$45.99	10.7%
Peoples Energy	$36.26	$2.26	16.0	$ 2.70	$43.32	$2.18	$2.18	$2.24	$ 0.02	$1.64	$2.18	$2.20	$2.22	$2.24	$43.32	9.8%
Piedmont Natural Gas	$23.53	$1.32	17.8	$ 1.75	$31.20	$0.96	$1.00	$1.17	$ 0.06	$0.72	$1.00	$1.06	$1.11	$1.17	$31.20	10.4%
South Jersey Industries	$27.40	$1.71	16.0	$ 2.30	$36.85	$0.93	$0.98	$1.15	$ 0.06	$0.70	$0.98	$1.04	$1.09	$1.15	$36.85	10.0%
Southern Union	$24.15	$1.45	16.7	$ 2.10	$34.98	$0.40	$0.42	$0.50	$ 0.03	$0.30	$0.42	$0.45	$0.47	$0.50	$34.98	9.8%
Southwest Gas	$27.99	$1.24	22.6	$ 2.30	$51.92	$0.82	$0.82	$0.82	$ -	$0.62	$0.82	$0.82	$0.82	$0.82	$51.92	16.4%
UGI Corp.	$21.91	$1.72	12.7	$ 1.85	$23.57	$0.69	$0.72	$0.81	$ 0.03	$0.52	$0.72	$0.75	$0.78	$0.81	$23.57	5.0%
WGL Holdings	$30.43	$2.11	14.4	$ 2.40	$34.61	$1.35	$1.38	$1.45	$ 0.02	$1.01	$1.38	$1.40	$1.43	$1.45	$34.61	7.3%
Average																**10.6%**

(a) The Value Line Investment Survey (Mar. 17, 2006).
(b) Computed by dividing Value Line's recent price by reported 2005 earnings per share.
(c) Computed as the product of trailing P/E ratio and Value Line's 2009-11 earnings per share.
(d) Annual change in dividend between 2007 and 2009-11.
(e) Discount rate that equates the present value of cash flows in years 1-5 with Recent Price.

AUTHORIZED RETURNS - CURRENT BOND YIELD

YEAR	QTR	(a) ALLOWED ROE	(b) SINGLE-A PUBLIC UTILITY BOND YIELD	RISK PREMIUM
1980	1	13.45%	13.49%	-0.04%
	2	14.38%	12.87%	1.51%
	3	13.87%	12.88%	0.99%
	4	14.35%	14.11%	0.24%
1981	1	14.69%	14.77%	-0.08%
	2	14.61%	15.82%	-1.21%
	3	14.86%	16.65%	-1.79%
	4	15.70%	16.57%	-0.87%
1982	1	15.55%	16.72%	-1.17%
	2	15.62%	16.26%	-0.64%
	3	15.72%	15.88%	-0.16%
	4	15.62%	14.56%	1.06%
1983	1	15.41%	14.15%	1.26%
	2	14.84%	13.58%	1.26%
	3	15.24%	13.52%	1.72%
	4	15.41%	13.38%	2.03%
1984	1	15.39%	13.56%	1.83%
	2	15.07%	14.72%	0.35%
	3	15.37%	14.47%	0.90%
	4	15.33%	13.38%	1.95%
1985	1	15.03%	13.31%	1.72%
	2	15.44%	12.95%	2.49%
	3	14.64%	12.11%	2.53%
	4	14.44%	11.49%	2.95%
1986	1	14.05%	10.18%	3.87%
	2	13.28%	9.41%	3.87%
	3	13.09%	9.39%	3.70%
	4	13.62%	9.31%	4.31%
1987	1	12.61%	8.96%	3.65%
	2	13.13%	9.77%	3.36%
	3	12.56%	10.61%	1.95%
	4	12.73%	11.05%	1.68%
1988	1	12.94%	10.32%	2.62%
	2	12.48%	10.71%	1.77%
	3	12.79%	10.94%	1.85%
	4	12.98%	9.98%	3.00%
1989	1	12.99%	10.13%	2.86%
	2	13.25%	9.94%	3.31%
	3	12.56%	9.53%	3.03%
	4	12.94%	9.50%	3.44%
1990	1	12.60%	9.72%	2.88%
	2	12.81%	9.91%	2.90%
	3	12.34%	9.93%	2.41%
	4	12.77%	9.89%	2.88%
1991	1	12.69%	9.58%	3.11%
	2	12.53%	9.50%	3.03%
	3	12.43%	9.33%	3.10%
	4	12.38%	9.02%	3.36%
1992	1	12.42%	8.91%	3.51%
	2	11.98%	8.86%	3.12%
	3	11.87%	8.47%	3.40%
	4	11.94%	8.53%	3.41%
1993	1	11.75%	8.07%	3.68%
	2	11.71%	7.81%	3.90%
	3	11.39%	7.28%	4.11%
	4	11.15%	7.22%	3.93%
1994	1	11.12%	7.55%	3.57%
	2	10.81%	8.29%	2.52%
	3	10.95%	8.51%	2.44%
	4	(c) 11.64%	8.87%	2.77%
1995	2	11.00%	7.93%	3.07%
	3	11.07%	7.72%	3.35%
	4	11.56%	7.37%	4.19%
1996	1	11.45%	7.44%	4.01%
	2	10.88%	7.98%	2.90%
	3	11.25%	7.96%	3.29%
	4	11.32%	7.62%	3.70%
1997	1	11.31%	7.76%	3.55%
	2	11.70%	7.88%	3.82%
	3	12.00%	7.49%	4.51%
	4	(c) 11.01%	7.25%	3.76%
1998	2	11.37%	7.12%	4.25%
	3	11.41%	6.99%	4.42%
	4	11.69%	6.97%	4.72%
1999	1	10.82%	7.11%	3.71%
	2	(c) 10.82%	7.48%	3.34%
	4	10.33%	8.05%	2.28%
2000	1	10.71%	8.29%	2.42%
	2	11.08%	8.45%	2.63%
	3	11.33%	8.25%	3.08%
	4	12.50%	8.03%	4.47%
2001	1	11.16%	7.74%	3.42%
	2	(c) 10.75%	7.93%	2.82%
	4	10.65%	7.68%	2.97%
2002	1	10.67%	7.65%	3.02%
	2	11.64%	7.50%	4.14%
	3	11.50%	7.19%	4.31%
	4	10.78%	7.15%	3.63%
2003	1	11.38%	6.93%	4.45%
	2	11.36%	6.40%	4.96%
	3	10.61%	6.64%	3.97%
	4	10.84%	6.35%	4.49%
2004	1	11.10%	6.09%	5.01%
	2	10.25%	6.48%	3.77%
	3	10.37%	6.13%	4.24%
	4	10.66%	5.94%	4.72%
2005	1	10.65%	5.74%	4.91%
	2	10.52%	5.52%	5.00%
	3	10.47%	5.51%	4.96%
	4	10.40%	5.62%	4.58%
Average			**9.64%**	**2.86%**

Implied Cost of Equity	
Average Yield over Study Period	9.64%
Mar. 2006 Single-A Utility Bond Yield (d)	5.98%
Change in Bond Yield	-3.66%
Risk Premium/Interest Rate Relationship	-0.47
Adjustment to Average Risk Premium	1.73%
Avg. Risk Premium over Study Period	2.86%
Adjusted Equity Risk Premium	4.59%
Mar. 2006 Single-A Utility Bond Yield (d)	5.98%
Implied Cost of Equity	**10.57%**

(a) *Major Rate Case Decisions*, Regulatory Focus, Regulatory Research Associates, Inc. (Jan. 2006, Jan. 24, 2001, & Jan. 16,

(b) Mergent *Public Utility Manual* (2003); Mergent *Bond Record* (Sep. 2005); Moody's Investors Service, *Credit Perspectives* (Nov. 7, 2005 & Jan. 23, 2006).

(c) No decisions reported for following quarter.

(d) Moody's Investors Service, *Credit Perspectives* (Apr. 17, 2006).

AUTHORIZED RETURNS - PROJECTED BOND YIELD

YEAR	QTR	(a) ALLOWED ROE	(b) SINGLE-A PUBLIC UTILITY BOND YIELD	RISK PREMIUM
1980	1	13.45%	13.49%	-0.04%
	2	14.38%	12.87%	1.51%
	3	13.87%	12.88%	0.99%
	4	14.35%	14.11%	0.24%
1981	1	14.69%	14.77%	-0.08%
	2	14.61%	15.82%	-1.21%
	3	14.86%	16.65%	-1.79%
	4	15.70%	16.57%	-0.87%
1982	1	15.55%	16.72%	-1.17%
	2	15.62%	16.26%	-0.64%
	3	15.72%	15.88%	-0.16%
	4	15.62%	14.56%	1.06%
1983	1	15.41%	14.15%	1.26%
	2	14.84%	13.58%	1.26%
	3	15.24%	13.52%	1.72%
	4	15.41%	13.38%	2.03%
1984	1	15.39%	13.56%	1.83%
	2	15.07%	14.72%	0.35%
	3	15.37%	14.47%	0.90%
	4	15.33%	13.38%	1.95%
1985	1	15.03%	13.31%	1.72%
	2	15.44%	12.95%	2.49%
	3	14.64%	12.11%	2.53%
	4	14.44%	11.49%	2.95%
1986	1	14.05%	10.18%	3.87%
	2	13.28%	9.41%	3.87%
	3	13.09%	9.39%	3.70%
	4	13.62%	9.31%	4.31%
1987	1	12.61%	8.96%	3.65%
	2	13.13%	9.77%	3.36%
	3	12.56%	10.61%	1.95%
	4	12.73%	11.05%	1.68%
1988	1	12.94%	10.32%	2.62%
	2	12.48%	10.71%	1.77%
	3	12.79%	10.94%	1.85%
	4	12.98%	9.98%	3.00%
1989	1	12.99%	10.13%	2.86%
	2	13.25%	9.94%	3.31%
	3	12.56%	9.53%	3.03%
	4	12.94%	9.50%	3.44%
1990	1	12.60%	9.72%	2.88%
	2	12.81%	9.91%	2.90%
	3	12.34%	9.93%	2.41%
	4	12.77%	9.89%	2.88%
1991	1	12.69%	9.58%	3.11%
	2	12.53%	9.50%	3.03%
	3	12.43%	9.33%	3.10%
	4	12.38%	9.02%	3.36%
1992	1	12.42%	8.91%	3.51%
	2	11.98%	8.86%	3.12%
	3	11.87%	8.47%	3.40%
	4	11.94%	8.53%	3.41%
1993	1	11.75%	8.07%	3.68%
	2	11.71%	7.81%	3.90%
	3	11.39%	7.28%	4.11%
	4	11.15%	7.22%	3.93%
1994	1	11.12%	7.55%	3.57%
	2	10.81%	8.29%	2.52%
	3	10.95%	8.51%	2.44%
	4	(c) 11.64%	8.87%	2.77%
1995	2	11.00%	7.93%	3.07%
	3	11.07%	7.72%	3.35%
	4	11.56%	7.37%	4.19%
1996	1	11.45%	7.44%	4.01%
	2	10.88%	7.98%	2.90%
	3	11.25%	7.96%	3.29%
	4	11.32%	7.62%	3.70%
1997	1	11.31%	7.76%	3.55%
	2	11.70%	7.88%	3.82%
	3	12.00%	7.49%	4.51%
	4	(c) 11.01%	7.25%	3.76%
1998	2	11.37%	7.12%	4.25%
	3	11.41%	6.99%	4.42%
	4	11.69%	6.97%	4.72%
1999	1	10.82%	7.11%	3.71%
	2	(c) 10.82%	7.48%	3.34%
	4	10.33%	8.05%	2.28%
2000	1	10.71%	8.29%	2.42%
	2	11.08%	8.45%	2.63%
	3	11.33%	8.25%	3.08%
	4	12.50%	8.03%	4.47%
2001	1	11.16%	7.74%	3.42%
	2	(c) 10.75%	7.93%	2.82%
	4	10.65%	7.68%	2.97%
2002	1	10.67%	7.65%	3.02%
	2	11.64%	7.50%	4.14%
	3	11.50%	7.19%	4.31%
	4	10.78%	7.15%	3.63%
2003	1	11.38%	6.93%	4.45%
	2	11.36%	6.40%	4.96%
	3	10.61%	6.64%	3.97%
	4	10.84%	6.35%	4.49%
2004	1	11.10%	6.09%	5.01%
	2	10.25%	6.48%	3.77%
	3	10.37%	6.13%	4.24%
	4	10.66%	5.94%	4.72%
2005	1	10.65%	5.74%	4.91%
	2	10.52%	5.52%	5.00%
	3	10.47%	5.51%	4.96%
	4	10.40%	5.82%	4.58%
Average			**9.64%**	**2.86%**

Implied Cost of Equity	
Average Yield over Study Period	9.64%
Projected 2007 Single-A Utility Bond Yield (d)	6.60%
Change in Bond Yield	-3.04%
Risk Premium/Interest Rate Relationship	-0.47
Adjustment to Average Risk Premium	1.44%
Avg. Risk Premium over Study Period	2.86%
Adjusted Equity Risk Premium	4.30%
Projected 2007 Single-A Utility Bond Yield (d)	6.60%
Implied Cost of Equity	**10.90%**

(a) *Major Rate Case Decisions*, Regulatory Focus, Regulatory Research Associates, Inc. (Jan. 2006, Jan. 24, 2001, & Jan. 16,

(b) Mergent *Public Utility Manual* (2003); Mergent *Bond Record* (Sep. 2005); Moody's Investors Service, *Credit Perspectives* (Nov. 7, 2005 & Jan. 23, 2006).

(c) No decisions reported for following quarter.

(d) Projected yield on public utility bonds for 2007 based on interest rate forecasts reported by GlobalInsight, *The U.S.*

REALIZED RETURNS -- CURRENT BOND YIELD

	Moody's Gas Distribution Stocks (a)			Moody's Single-A Utility Bonds (b)		
	DEC PRICE	DIV	Annual Realized Return	DEC YIELD	PRICE	Annual Realized Return
1952	$20.57			3.22%		
1953	$21.23	$1.09	8.51%	3.38%	$97.33	0.55%
1954	$26.47	$1.19	30.29%	3.11%	$104.64	8.02%
1955	$28.10	$1.32	11.14%	3.35%	$95.98	-0.91%
1956	$28.23	$1.43	5.55%	3.91%	$91.17	-5.48%
1957	$25.78	$1.49	-3.40%	4.36%	$93.23	-2.86%
1958	$38.71	$1.53	56.09%	4.49%	$98.07	2.43%
1959	$39.59	$1.63	6.48%	4.96%	$93.35	-2.16%
1960	$48.21	$1.79	26.29%	4.65%	$104.53	9.49%
1961	$64.96	$1.91	38.71%	4.65%	$100.00	4.65%
1962	$59.73	$2.01	-4.96%	4.44%	$103.13	7.78%
1963	$64.62	$2.13	11.75%	4.46%	$99.70	4.14%
1964	$68.24	$2.27	9.11%	4.54%	$98.82	3.28%
1965	$64.31	$2.40	-2.24%	4.83%	$95.84	0.38%
1966	$53.50	$2.75	-12.53%	5.67%	$88.92	-6.25%
1967	$50.49	$2.67	-0.64%	6.67%	$87.99	-6.34%
1968	$53.80	$2.79	12.08%	6.87%	$97.64	4.31%
1969	$43.88	$2.88	-13.09%	8.59%	$82.53	-10.60%
1970	$52.33	$2.97	26.03%	8.48%	$101.13	9.72%
1971	$47.86	$3.06	-2.69%	7.90%	$106.24	14.72%
1972	$53.54	$3.10	18.35%	7.48%	$104.69	12.59%
1973	$43.43	$3.21	-12.89%	8.24%	$92.05	-0.47%
1974	$29.71	$3.31	-23.97%	10.27%	$81.95	-9.81%
1975	$38.29	$3.43	40.42%	10.11%	$101.44	11.71%
1976	$51.80	$3.65	44.82%	8.62%	$115.10	25.21%
1977	$50.88	$3.85	5.66%	8.64%	$99.80	8.42%
1978	$45.97	$4.07	-1.65%	9.70%	$90.15	-1.21%
1979	$53.50	$4.33	25.80%	11.79%	$83.37	-6.93%
1980	$56.61	$4.59	14.39%	14.63%	$81.23	-6.98%
1981	$53.50	$4.95	3.25%	16.29%	$90.04	4.67%
1982	$50.62	$5.28	4.49%	14.43%	$112.45	28.74%
1983	$55.79	$5.45	20.98%	13.52%	$106.45	20.88%
1984	$69.70	$5.71	35.17%	13.11%	$102.98	16.50%
1985	$76.58	$6.06	18.57%	10.97%	$118.06	31.17%
1986	$90.89	$5.68	26.10%	9.12%	$118.00	28.97%
1987	$77.25	$5.86	-8.56%	10.98%	$84.31	-6.57%
1988	$86.76	$6.15	20.27%	10.06%	$108.31	19.29%
1989	$117.05	$6.45	42.35%	9.44%	$105.88	15.94%
1990	$108.86	$6.70	-1.27%	9.73%	$97.31	6.75%
1991	$124.32	$6.94	20.58%	8.88%	$108.43	18.16%
1992	$138.79	$7.08	17.33%	8.43%	$104.63	13.51%
1993	$154.06	$7.23	16.21%	7.34%	$112.32	20.75%
1994	$126.96	$7.36	-12.81%	8.76%	$85.78	-6.88%
1995	$155.94	$7.48	28.72%	7.23%	$117.47	26.23%
1996	$166.64	$7.76	11.84%	7.59%	$96.02	3.25%
1997	$191.04	$7.99	19.44%	7.16%	$104.94	12.53%
1998	$177.24	$8.12	-2.97%	6.91%	$102.94	10.10%
1999	$166.84	$8.18	-1.25%	8.14%	$87.03	-6.06%
2000	$200.68	$8.22	25.21%	7.84%	$103.25	11.39%
2001	$203.07	$8.22	5.29%	7.83%	$100.11	7.95%
2002	$198.14	$8.64	1.83%	7.07%	$108.80	16.63%
2003	$218.54	$8.72	14.70%	6.27%	$109.97	17.04%
2004	$236.49	$8.76	12.22%	5.92%	$104.51	10.78%
2005	$221.56	$9.09	-2.47%	5.79%	$101.70	7.62%
AVERAGE 1953-2005			**11.93%**			**7.49%**

Realized Rates of Return	
Moody's Gas Distribution	11.93%
Single-A Public Utility Bonds	7.49%
Equity Risk Premium	4.44%
Mar. 2006 Single-A Utility Bond Yield (c)	5.98%
Implied Cost of Equity	**10.42%**

(a) Mergent *Public Utility Manual* (2002); Mergent *Public Utility News Reports* (Jan. 15, 2002); updated through 2005 based on data from The Value Line Investment Survey and Yahoo Finance.

(b) Mergent *Public Utility Manual* (2003), Mergent *Bond Record* (Sep. 2005), Moody's *Credit Perspectives* (Jan. 23, 2006).

(c) Moody's *Credit Perspectives* (Apr. 17, 2006).

REALIZED RETURNS -- PROJECTED BOND YIELD

	Moody's Gas Distribution Stocks (a)			Moody's Single-A Utility Bonds (b)		
	DEC PRICE	DIV	Annual Realized Return	DEC YIELD	PRICE	Annual Realized Return
1952	$20.57			3.22%		
1953	$21.23	$1.09	8.51%	3.38%	$97.33	0.55%
1954	$26.47	$1.19	30.29%	3.11%	$104.64	8.02%
1955	$28.10	$1.32	11.14%	3.35%	$95.98	-0.91%
1956	$28.23	$1.43	5.55%	3.91%	$91.17	-5.48%
1957	$25.78	$1.49	-3.40%	4.36%	$93.23	-2.86%
1958	$38.71	$1.53	56.09%	4.49%	$98.07	2.43%
1959	$39.59	$1.63	6.48%	4.96%	$93.35	-2.16%
1960	$48.21	$1.79	26.29%	4.65%	$104.53	9.49%
1961	$64.96	$1.91	38.71%	4.65%	$100.00	4.65%
1962	$59.73	$2.01	-4.96%	4.44%	$103.13	7.78%
1963	$64.62	$2.13	11.75%	4.46%	$99.70	4.14%
1964	$68.24	$2.27	9.11%	4.54%	$98.82	3.28%
1965	$64.31	$2.40	-2.24%	4.83%	$95.84	0.38%
1966	$53.50	$2.75	-12.53%	5.67%	$88.92	-6.25%
1967	$50.49	$2.67	-0.64%	6.67%	$87.99	-6.34%
1968	$53.80	$2.79	12.08%	6.87%	$97.64	4.31%
1969	$43.88	$2.88	-13.09%	8.59%	$82.53	-10.60%
1970	$52.33	$2.97	26.03%	8.48%	$101.13	9.72%
1971	$47.86	$3.06	-2.69%	7.90%	$106.24	14.72%
1972	$53.54	$3.10	18.35%	7.48%	$104.69	12.59%
1973	$43.43	$3.21	-12.89%	8.24%	$92.05	-0.47%
1974	$29.71	$3.31	-23.97%	10.27%	$81.95	-9.81%
1975	$38.29	$3.43	40.42%	10.11%	$101.44	11.71%
1976	$51.80	$3.65	44.82%	8.62%	$115.10	25.21%
1977	$50.88	$3.85	5.66%	8.64%	$99.80	8.42%
1978	$45.97	$4.07	-1.65%	9.70%	$90.15	-1.21%
1979	$53.50	$4.33	25.80%	11.79%	$83.37	-6.93%
1980	$56.61	$4.59	14.39%	14.63%	$81.23	-6.98%
1981	$53.50	$4.95	3.25%	16.29%	$90.04	4.67%
1982	$50.62	$5.28	4.49%	14.43%	$112.45	28.74%
1983	$55.79	$5.45	20.98%	13.52%	$106.45	20.88%
1984	$69.70	$5.71	35.17%	13.11%	$102.98	16.50%
1985	$76.58	$6.06	18.57%	10.97%	$118.06	31.17%
1986	$90.89	$5.68	26.10%	9.12%	$118.00	28.97%
1987	$77.25	$5.86	-8.56%	10.98%	$84.31	-6.57%
1988	$86.76	$6.15	20.27%	10.06%	$108.31	19.29%
1989	$117.05	$6.45	42.35%	9.44%	$105.88	15.94%
1990	$108.86	$6.70	-1.27%	9.73%	$97.31	6.75%
1991	$124.32	$6.94	20.58%	8.88%	$108.43	18.16%
1992	$138.79	$7.08	17.33%	8.43%	$104.63	13.51%
1993	$154.06	$7.23	16.21%	7.34%	$112.32	20.75%
1994	$126.96	$7.36	-12.81%	8.76%	$85.78	-6.88%
1995	$155.94	$7.48	28.72%	7.23%	$117.47	26.23%
1996	$166.64	$7.76	11.84%	7.59%	$96.02	3.25%
1997	$191.04	$7.99	19.44%	7.16%	$104.94	12.53%
1998	$177.24	$8.12	-2.97%	6.91%	$102.94	10.10%
1999	$166.84	$8.18	-1.25%	8.14%	$87.03	-6.06%
2000	$200.68	$8.22	25.21%	7.84%	$103.25	11.39%
2001	$203.07	$8.22	5.29%	7.83%	$100.11	7.95%
2002	$198.14	$8.64	1.83%	7.07%	$108.80	16.63%
2003	$218.54	$8.72	14.70%	6.27%	$109.97	17.04%
2004	$236.49	$8.76	12.22%	5.92%	$104.51	10.78%
2005	$221.56	$9.09	-2.47%	5.79%	$101.70	7.62%
AVERAGE 1953-2005			**11.93%**			**7.49%**

Realized Rates of Return	
Moody's Gas Distribution	11.93%
Single-A Public Utility Bonds	7.49%
Equity Risk Premium	4.44%
2007 Single-A Utility Bond Yield (c)	6.60%
Implied Cost of Equity	**11.04%**

(a) Mergent *Public Utility Manual* (2002); Mergent *Public Utility News Reports* (Jan. 15, 2002); updated through 2005 based on data from The Value Line Investment Survey and Yahoo Finance.

(b) Mergent *Public Utility Manual* (2003), Mergent *Bond Record* (Sep. 2005), Moody's *Credit Perspectives* (Jan. 23, 2006).

(c) Projected yield on public utility bonds for 2007 based on interest rate forecasts reported by GlobalInsight, The U.S. Economy: The 25-Year Focus (Third-Quarter 2005), Energy Information Administration, Annual Energy Outlook 2006 (Jan. 2006) , and Blue Chip Financial Forecasts (Apr. 1, 2006).

CAPITAL ASSET PRICING MODEL **Schedule WEA-10**
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FORWARD-LOOKING RISK PREMIUM - CURRENT BOND YIELD

Market Rate of Return		
Dividend Yield (a)	2.1%	
Growth Rate (b)	11.3%	
Market Return (c)		13.4%
Less: Risk-Free Rate (d)		
Long-term Treasury Bond Yield		4.9%
Market Risk Premium (e)		8.5%
Utility Proxy Group Beta (f)		0.83
Utility Proxy Group Risk Premium (g)		7.0%
Plus: Risk-free Rate (d)		
Long-term Treasury Bond Yield		4.9%
Implied Cost of Equity (h)		**11.9%**

(a) Weighted average dividend yield for the dividend paying firms in the S&P 500 from www.valueline.com (Retreived Mar. 30, 2006).
(b) Weighted average of IBES and Value Line growth rates for the dividend paying firms in the S&P 500 based on data from Standard & Poor's *Earnings Guide* (Mar. 2006) and www.valueline.com (Retreived Mar. 30, 2006).
(c) (a) + (b)
(d) Average of the daily yields on 20-year Treasury bonds for March 2006 reported by the U.S. Department of the Treasury at www.treas.gov.
(e) (c) - (d).
(f) The Value Line Investment Survey (Mar. 17, 2006).
(g) (e) x (f).
(h) (d) + (g).

CAPITAL ASSET PRICING MODEL **Schedule WEA-10**
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FORWARD-LOOKING RISK PREMIUM - PROJECTED BOND YIELD

Market Rate of Return		
Dividend Yield (a)	2.1%	
Growth Rate (b)	11.3%	
Market Return (c)		13.4%
Less: Risk-Free Rate (d)		
Long-term Treasury Bond Yield		5.3%
Market Risk Premium (e)		8.1%
Utility Proxy Group Beta (f)		0.83
Utility Proxy Group Risk Premium (g)		6.7%
Plus: Risk-free Rate (d)		
Long-term Treasury Bond Yield		5.3%
Implied Cost of Equity (h)		**12.0%**

(a) Weighted average dividend yield for the dividend paying firms in the S&P 500 from www.valueline.com (Retreived Mar. 30, 2006).
(b) Weighted average of IBES and Value Line growth rates for the dividend paying firms in the S&P 500 based on data from Standard & Poor's *Earnings Guide* (Mar. 2006) and www.valueline.com (Retreived Mar. 30, 2006).
(c) (a) + (b)
(d) Projected yield on 20-year Treasury bonds for 2007 based on interest rate forecasts reported by GlobalInsight, *The U.S. Economy: The 25-Year Focus* (Third-Quarter 2005), Energy Information Administration, *Annual Energy Outlook 2006* (Jan. 2006), and Blue Chip Financial Forecasts (Apr. 1, 2006).
(e) (c) - (d).
(f) The Value Line Investment Survey (Mar. 17, 2006).
(g) (e) x (f).
(h) (d) + (g).

CAPITAL ASSET PRICING MODEL **Schedule WEA-11**
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HISTORICAL RISK PREMIUM - CURRENT BOND YIELD

Market Risk Premium	
Long-Horizon Equity Risk Premium (a)	7.2%
Utility Proxy Group Beta (b)	0.83
Utility Proxy Group Risk Premium (c)	5.9%
Plus: Risk-free Rate (d)	
Long-term Treasury Bond Yield	4.9%
Implied Cost of Equity (e)	**10.8%**

(a) Arithmetic mean return on Large Company Stocks from 1926-2004 reported by Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, Valuation Edition, 2005 Yearbook*, at Appendix C.
(b) The Value Line Investment Survey (Mar. 17, 2006).
(c) (a) x (b).
(d) Average of the daily yields on 20-year Treasury bonds for March 2006 reported by the U.S. Department of the Treasury at www.treas.gov.
(e) (c) + (d).

CAPITAL ASSET PRICING MODEL

HISTORICAL RISK PREMIUM - PROJECTED BOND YIELD

Market Risk Premium	
Long-Horizon Equity Risk Premium (a)	7.2%
Utility Proxy Group Beta (b)	0.83
Utility Proxy Group Risk Premium (c)	5.9%
Plus: Risk-free Rate (d)	
Long-term Treasury Bond Yield	5.3%
Implied Cost of Equity (e)	**11.2%**

(a) Arithmetic mean return on Large Company Stocks from 1926-2004 reported by Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, Valuation Edition, 2005 Yearbook*, at Appendix C.

(b) The Value Line Investment Survey (Mar. 17, 2006).

(c) (a) x (b).

(d) Projected yield on 20-year Treasury bonds for 2007 based on interest rate forecasts reported by GlobalInsight, *The U.S. Economy: The 25-Year Focus* (Third-Quarter 2005), Energy Information Administration, *Annual Energy Outlook 2006* (Jan. 2006), and Blue Chip Financial Forecasts (Apr. 1, 2006).

(e) (c) + (d).