Exhibit No.___(JSG-1)

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.

BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

Docket No. NG15-___

PREPARED DIRECT TESTIMONY OF

J. STEPHEN GASKE

Q1. Please state your name, position and business address.

A1. My name is J. Stephen Gaske and I am a Senior Vice President of Concentric Energy Advisors, Inc., 1130 Connecticut Avenue NW, Suite 850, Washington, DC 20036.

Q2. Would you please describe your educational and professional background?

A2. I hold a B.A. degree from the University of Virginia and an M.B.A. degree with a major in finance and investments from George Washington University. I also earned a Ph.D. degree from Indiana University where my major field of study was public utilities and my supporting fields were finance and economics.

From 1977 to 1980, I worked for H. Zinder & Associates ("HZA") as a research assistant and later as supervisor of regulatory research. Subsequently, I spent a year assisting in the preparation of cost of capital studies for presentation in regulatory proceedings.

From 1982 to 1986, I undertook graduate studies in economics and finance at Indiana University where I also taught courses in public utilities, transportation, and physical distribution. During this time, I also was employed as an independent

consultant on a number of projects involving public utility regulation, rate design, and cost of capital. From 1983 to 1986, I was coordinator for the Edison Electric Institute Electric Rate Fundamentals course. In 1986, I accepted an appointment as assistant professor at Trinity University in San Antonio, Texas, where I taught courses in financial management, investments, corporate finance, and corporate financial theory.

In 1988, I returned to HZA and was President of the company from 2000 to 2008. In May 2008, HZA merged with Concentric Energy Advisors, Inc. ("Concentric") and I became a Senior Vice President of Concentric.

Q3. Have you presented expert testimony in other proceedings?

A3. Yes. I have filed testimony on the cost of capital and capital structure issues for electric and natural gas distribution and oil and natural gas pipeline operations before 11 state and provincial regulatory bodies, including the South Dakota Public Utilities Commission ("PUC"). I also have testified or filed testimony or affidavits before various federal regulators, including the Federal Energy Regulatory Commission on more than thirty occasions, the National Energy Board of Canada, and the Comisión Reguladora de Energía of México. Topics covered in these submissions have included rate of return, capital structure, cost allocation, rate design, revenue requirements, and market power. In addition, I have testified or submitted testimony on issues such as cost allocation, rate design, pricing and generating plant economics before the U.S. Postal Rate Commission, regulators in four Canadian provinces, and seven U.S. state public utility commissions. During the course of my consulting career, I have conducted many studies on issues related

to regulated industries and have served as an advisor to numerous clients on economic, competitive, and financial matters. I also have spoken and lectured before many professional groups including the American Gas Association and the Edison Electric Institute Rate Fundamentals courses. Finally, I am a member of the American Economic Association, the Financial Management Association, and the American Finance Association.

I. INTRODUCTION

A. Scope and Overview

Q4. What is the scope of your testimony in this proceeding?

A4. I have been asked by Montana-Dakota Utilities Co. ("Montana-Dakota" or the "Company") to estimate the cost of common equity capital for the Company's natural gas distribution operations in the state of South Dakota. In this testimony, I calculate the cost of common equity capital for Montana-Dakota's South Dakota natural gas distribution operations based on a Discounted Cash Flow ("DCF") analysis of a group of proxy companies that have risks similar to those of Montana-Dakota's South Dakota gas distribution operations. The results of this DCF study are supported by various benchmark criteria that I have used to test the reasonableness of the DCF study results.

Q5. What rate of return is Montana-Dakota requesting in this proceeding?

A5. Based on its test period capital structure, Montana-Dakota is requesting the following rate of return:

Table 1: Requested Rate of Return – South Dakota Gas Distribution Operations[1]

Source	Amount (million)	Percent	Cost	Overall Rate of Return
Long-Term Debt	$505.5	41.135%	5.949%	2.447%
Short-Term Debt	$99.6	8.108%	1.631%	0.132%
Preferred Stock	$15.3	1.242%	4.579%	0.057%
Common Equity	$608.4	49.515%	10.000%	4.952%
TOTAL	$1228.8	100.000%		7.588%

As my testimony discusses, an overall allowed rate of return of 7.588 percent, with a 10.0 percent return on common equity, represents the cost of capital for Montana-Dakota at this time.

B. Company Background

Q6. Please describe Montana-Dakota's operations and those of its parent company, MDU Resources Group, Inc.

A6. Montana-Dakota is a wholly-owned division of MDU Resources Group, Inc. ("MDU Resources") that is engaged in the generation, transmission, and distribution of electricity, and the distribution of natural gas in the states of Montana, North Dakota, South Dakota, and Wyoming. MDU Resources also owns Cascade Natural Gas Co., which distributes natural gas in the states of Oregon and Washington; Intermountain Gas Company, which distributes natural gas in the state

[1] Projected average capital structure and rate of return for 2015.

of Idaho; and Great Plains Natural Gas Co., which distributes natural gas in western Minnesota and southeastern North Dakota. Through other divisions and subsidiaries, MDU Resources is engaged in utility infrastructure construction, natural gas and oil exploration and production, natural gas gathering and transmission, and produces and markets aggregates and other construction materials.

In 2014, the utility companies within MDU Resources provided natural gas distribution service to over 892,000 residential, commercial, and industrial customers in 334 communities across eight states.[2] In addition, Montana-Dakota provided electric utility service to over 138,000 residential, commercial, industrial, and municipal customers in 177 communities and adjacent rural areas across four states.[3] Natural gas distribution assets comprised 24.7 percent[4] of MDU Resources' total assets in 2014, and natural gas distribution revenues comprised 19.7 percent[5] of total operating revenues. South Dakota accounted for 7.0 percent of the natural gas distribution operating sales revenues, while Idaho (29.0 percent), Washington (25.0 percent), North Dakota (16.0 percent), Montana (9.0 percent), Oregon (8.0 percent), Minnesota (4.0 percent) and Wyoming (2.0 percent) for the other 93.0 percent of retail gas distribution operating sales revenues.[6]

---

2 MDU Resources Group, Inc., Form 10-K for the fiscal year ended December 31, 2014, at 11.
3 *Ibid,* at 7.
4 *Ibid.*, at 86.
5 *Ibid.*, at 85.
6 *Ibid.*, at 11.

Q7. Would you please describe Montana-Dakota's South Dakota natural gas distribution service territory?

A7. As discussed in the testimony of Company witness Darras, Montana-Dakota provides natural gas distribution service in South Dakota to approximately 57,000 customers in 25 communities, operating over 1,401 miles of distribution mains and approximately 1,058 miles of service lines. Montana-Dakota's South Dakota gas service area is divided into two operating regions with regional offices located in Rapid City, South Dakota, and Bismarck, North Dakota.[7] The economy of western and north-central South Dakota is heavily dependent on the agricultural business segment, as well as on Ellsworth Air Force Base, tourism, light manufacturing and state government. From an economic perspective, the mostly rural nature of western and north-central South Dakota poses accessibility challenges, resulting in less access to markets and high transportation costs to larger markets. In addition, rural county residents lack access to the same variety of goods and services that are available in more heavily populated areas of the country.

Company witness Kivisto explains that the primary reason for the rate case filing is increased operating costs along with increased investment in facilities and the depreciation, operation and maintenance expenses and taxes associated with the increase in investment.[8] The gross investment in Montana-Dakota's South Dakota gas operations has increased by approximately $11.5 million (or 12 percent) from 2012 to 2014.[9] According to Mr. Darras, customer growth was steady over this

---

7 Direct Testimony of Pat Darras, at 2.
8 Direct Testimony of Nicole A. Kivisto, at 6.
9 *Ibid*, at 7.

time period, with many new multi-family developments and commercial projects. Approximately 80 percent of main installation was due to system growth, while the remaining 20 percent was for replacements necessary to improve the system or as a result of other projects such as road work.[10]

II. FINANCIAL MARKET STUDIES

A. Criteria for a Fair Rate of Return

Q8. Please describe the criteria which should be applied in determining a fair rate of return for a regulated company.

A8. The United States Supreme Court has provided general guidance regarding the level of allowed rate of return that will meet constitutional requirements. In *Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia (262 U.S. 679, 693 (1923))*, the Court indicated that:

> The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.

[10] Direct Testimony of Pat Darras, at 6.

The Court has further elaborated on this requirement in its decision in *Federal Power Commission v. Hope Natural Gas Company (320 U.S. 591, 603 (1944))*. There the Court described the relevant criteria as follows:

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

Thus, the standards established by the Court in *Hope* and *Bluefield* consist of three requirements. These are that the allowed rate of return should be:

1. commensurate with returns on enterprises with corresponding risks;
2. sufficient to maintain the financial integrity of the regulated company; and
3. adequate to allow the company to attract capital on reasonable terms.

These legal criteria will be satisfied best by employing the economic concept of the "cost of capital" or "opportunity cost" in establishing the allowed rate of return on common equity. For every investment alternative, investors consider the risks attached to the investment and attempt to evaluate whether the return they expect to earn is adequate for the risks undertaken. Investors also consider whether there might be other investment opportunities that would provide a better return relative to the risk involved. This weighing of alternatives and the highly competitive nature of capital markets causes the prices of stocks and bonds to adjust in such a

way that investors can expect to earn a return that is just adequate for the risks involved. Thus, for any given level of risk, there is a return that investors expect in order to induce them to voluntarily undertake that risk and not invest their money elsewhere. That return is referred to as the "opportunity cost" of capital or "investor required" return.

Q9. How should a fair rate of return be evaluated from the standpoint of consumers and the public?

A9. The same standards should apply. When an unregulated entity faces competition, the pressure of that competition and consumer choices will combine to determine the fair rate of return. However, when regulation is appropriate, consumers and the public have a long-term interest in seeing that the regulated company has an opportunity to earn returns that are not so high as to be excessive, but that also are sufficient to encourage continued replacement and maintenance, as well as needed expansions, extensions, and new services. Thus, both the consumer and the public interest depend on establishing a return that will readily attract capital without being excessive.

Q10. How are the costs of preferred stock and long-term debt determined?

A10. For purposes of setting regulated rates, the current embedded costs of preferred stock and long-term debt are used in order to ensure that the company receives a return that is sufficient to pay the fixed dividend and interest obligations that are attached to these sources of capital.

Q11. How is the cost of common equity determined?

A11. The practice in setting a fair rate of return on common equity is to use the current market cost of common equity in order to ensure that the return is adequate to attract capital and is commensurate with returns available on other investments with similar levels of risk. However, determining the market cost of common equity is a relatively complicated task that requires analysis of many factors and some degree of judgment by an analyst. The current market cost of capital for securities that pay a fixed level of interest or dividends is relatively easy to determine. For example, the current market cost of debt for publicly-traded bonds can be calculated as the yield-to-maturity, adjusted for flotation costs, based on the current market price at which the bonds are selling. In contrast, because common stockholders receive only the residual earnings of the company, there are no fixed contractual payments which can be observed. This uncertainty associated with the dividends that eventually will be paid greatly complicates the task of estimating the cost of common equity capital. For purposes of this testimony, I have relied on several analytical approaches for estimating the cost of common equity. My primary approach relies on three DCF analyses. In addition, I have conducted a risk premium analysis and a market DCF analysis of the S&P 500 as benchmarks to assess the reasonableness of the DCF results. Each of these approaches is described later in this testimony.

B. Interest Rates and the Economy

Q12. What are the general economic factors that affect the cost of capital?

A12. Companies attempting to attract common equity must compete with a variety of alternative investments. Prevailing interest rates and other measures of economic trends influence investors' perceptions of the economic outlook and its implications on both short- and long-term capital markets. Page 1 of Schedule 1 of Exhibit No.___(JSG-2) shows various general economic statistics. Real growth in Gross Domestic Product ("GDP") has averaged 2.7 percent annually during the past 30 years, 2.5 percent for the past 20 years, and 1.6 percent for the past 10 years. After increasing at an annual rate of 2.2 percent in the fourth quarter of 2014, the Bureau of Economic Analysis reported that for the first quarter of 2015 real economic growth contracted at an annual rate of -0.2 percent.[11] According to Blue Chip Economic Indicators, the consensus forecast for expected growth in real GDP is 2.5 percent in 2015[12] and 2.8 percent in 2016.[13] Likewise, the U.S. unemployment rate has improved in recent months to 5.4 percent as of April 2015,[14] but the labor force participation rate for civilians 16 years and over remained at 62.8 percent as of April 2015, the lowest rate since the late 1970s.[15] Improvements in the U.S. unemployment rate are partly attributed to the reduced U.S. labor force and are not fully explained by job growth. In light of these weak economic conditions, the Federal Reserve has maintained its federal funds rate of 0.00 percent to 0.25 percent

---

11 U.S. Department of Commerce, Bureau of Economic Analysis, News Release, June 24, 2015.
12 Blue Chip Economic Indicators, Vol. 40, No. 5, May 10, 2015, at 2.
13 *Ibid.*, at 3.
14 U.S. Department of Labor, Bureau of Labor Statistics, News Release, May 8, 2015.
15 U.S. Department of Labor, Bureau of Labor Statistics, civilian labor force participation rate, 16 years and over, seasonally adjusted.

for overnight loans to banks in order to provide continued liquidity to the U.S. financial markets.[16]

As pages 2 and 3 of Schedule 1 of Exhibit No.___(JSG-2) show, interest rates on longer-term public utility bonds have decreased by approximately 50 basis points over the past three years. From July 2014 through April 2015, the average yield on A-rated public utility bonds was 3.94 percent and the average yield on Baa-rated public utility bonds was 4.61 percent. Credit spreads, which measure the incremental cost of corporate debt relative to U.S. Treasury bonds, have increased in recent months after declining during the past three years with the average spread of A-rated utility bonds over 30-year U.S. Treasury bonds at 1.05 percent for the period from July 2014 through April 2015. Similarly, the average spread of Baa-rated utility bonds over 30-year U.S. Treasury bonds was 1.71 percent over the same ten month period.

Investors also are influenced by both the historical and projected level of inflation. As also shown on Page 1 of Schedule 1 of Exhibit No.___(JSG-2), during the past decade, the Consumer Price Index has increased at an average annual rate of 2.3 percent and the GDP Implicit Price Deflator, a measure of price changes for all goods produced in the United States, has increased at an average rate of 2.0 percent. According to Blue Chip Economic Indicators, the Consumer Price Index is forecasted to increase by 0.2 percent[17] and 2.2 percent[18] for 2015 and 2016,

---

16 Statement of the Federal Open Market Committee, April 29, 2015.
17 Blue Chip Economic Indicators, Vol. 40, No.5, May 10, 2015, at 2.
18 *Ibid.*, at 3.

respectively. Over the intermediate and longer-term, however, investors can expect higher inflation rates as the Federal Reserve's accommodative monetary policy, which began in 2008, places upward pressure on consumer and producer prices once economic growth returns to historical levels. According to Blue Chip Financial Forecasts, the projected yield on 30-year U.S. Treasury bonds from 2016 to 2020 is 4.9 percent and from 2021 to 2025 it is 5.1 percent.[19] These interest rates are significantly higher than the current yield on the 30-year U.S. Treasury bond, suggesting that investors expect a substantial increase in inflationary pressure over the intermediate and long-term periods.

Q13. How are current economic conditions reflected in the equity markets?

A13. Although corporate bond yields are lower than pre-crisis levels and credit spreads for public utility bonds have returned to pre-recession levels primarily due to Federal Reserve monetary policy, investors remain risk averse and inflation fears persist. The equity markets have recovered from the large stock market decline in 2008 and 2009, but the Federal Reserve's massive purchases of federal debt and mortgage-backed securities have created artificially low interest rates and a potential stock market valuation bubble that increases the risks in the equity market.

[19] Blue Chip Financial Forecasts, Vol. 33, No. 6, December 1, 2014, at 14.

C. Discounted Cash Flow ("DCF") Method

Q14. Please describe the DCF method of estimating the cost of common equity capital.

A14. The DCF method reflects the assumption that the market price of a share of common stock represents the discounted present value of the stream of all future dividends that investors expect the firm to pay. The DCF method suggests that investors in common stocks expect to realize returns from two sources: a current dividend yield plus expected growth in the value of their shares as a result of future dividend increases. Estimating the cost of capital with the DCF method, therefore, is a matter of calculating the current dividend yield and estimating the long-term future growth rate in dividends that investors reasonably expect from a company.

The dividend yield portion of the DCF method utilizes readily-available information regarding stock prices and dividends. The market price of a firm's stock reflects investors' assessments of risks and potential earnings as well as their assessments of alternative opportunities in the competitive financial markets. By using the market price to calculate the dividend yield, the DCF method implicitly recognizes investors' market assessments and alternatives. However, the other component of the DCF formula, investors' expectations regarding the future long-run growth rate of dividends, is not readily apparent from stock market data and must be estimated using informed judgment.

Q15. What is the appropriate DCF formula to use in this proceeding?

A15. There can be many different versions of the basic DCF formula, depending on the assumptions that are most reasonable regarding the timing of future dividend payments. In my opinion, it is most appropriate to use a model that is based on the assumptions that dividends are paid quarterly and that the next annual dividend increase is a half year away. One version of this quarterly model assumes that the next dividend payment will be received in three months, or one quarter. This model multiplies the dividend yield by $(1 + 0.75g)$. Another version assumes that the next dividend payment will be received today. This model multiplies the dividend yield by $(1 + 0.5g)$. Since, on average, the next dividend payment is a half quarter away, the average of the results of these two models is a reasonable approximation of the average timing of dividends and dividend increases that investors can expect from companies that pay dividends quarterly. The average of these two quarterly dividend models is:

$$K = \frac{D_0(1 + 0.625g)}{P} + g$$

Where:
- K = the cost of capital, or total return that investors expect to receive;
- P = the current market price of the stock;
- D_0 = the current annual dividend rate; and
- g = the future annual growth rate that investors expect.

In my opinion, this is the DCF model that is most appropriate for estimating the cost of common equity capital for companies that pay dividends quarterly, such as those used in my analysis.

D. Flotation Cost Adjustment

Q16. Does the investor return requirement that is estimated by a DCF analysis need to be adjusted for flotation costs in order to estimate the cost of capital?

A16. Yes. There are significant costs associated with issuing new common equity capital, and these costs must be considered in determining the cost of capital. Schedule 2 of Exhibit No.___(JSG-2) shows a representative sample of flotation costs incurred with 50 new common stock issues by natural gas distribution companies since January 2000. Flotation costs associated with these new issues averaged 3.90 percent.

This indicates that in order to be able to issue new common stock on reasonable terms, without diluting the value of the existing stockholders' investment, Montana-Dakota must have an expected return that places a value on its equity that is approximately 4.0 percent above book value. The cost of common equity capital is therefore the investor return requirement multiplied by 1.04.

One purpose of a flotation cost adjustment is to compensate common equity investors for past flotation costs by recognizing that their real investment in the company exceeds the equity portion of the rate base by the amount of past flotation costs. For example, the proxy companies generally have incurred flotation costs in the past and, thus, the cost of capital invested in these companies is the investor return requirement plus an adjustment for flotation costs. A more important purpose of a flotation cost adjustment is to establish a return that is sufficient to enable a company to attract capital on reasonable terms. This fundamental

requirement of a fair rate of return is analogous to the well-understood basic principle that a firm, or an individual, should maintain a good credit rating even when they do not expect to be borrowing money in the near future. Regardless of whether a company can confidently predict its need to issue new common stock several years in advance, it should be in a position to do so on reasonable terms at all times without dilution of the book value of the existing investors' common equity. This requires that the flotation cost adjustment be applied to the entire common equity investment and not just a portion of it.

E. DCF Study of Natural Gas Distribution Companies

Q17. Would you please describe the overall approach used in your DCF analysis of Montana-Dakota's cost of common equity for its South Dakota natural gas distribution operations?

A17. Because Montana-Dakota's South Dakota natural gas distribution operations must compete for capital with many other potential projects and investments, it is essential that it have an allowed return that matches returns potentially available from other similarly risky investments. The DCF method provides a good measure of the returns required by investors in the financial markets. However, the DCF method requires a market price of common stock to compute the dividend yield component. Since Montana-Dakota is a division of MDU Resources and does not have publicly-traded common stock, a direct, market-based DCF analysis of Montana-Dakota's South Dakota natural gas distribution operations as a stand-alone company is not possible. As an alternative, I have used a group of natural gas distribution companies that have publicly-traded common stock as a proxy

group for purposes of estimating the cost of common equity for Montana-Dakota's South Dakota natural gas distribution operations.

Q18. How did you select a group of natural gas distribution proxy companies?

A18. I started with the eleven companies that The Value Line Investment Survey ("Value Line") classifies as Natural Gas Utilities to ensure that the company is considered to be primarily engaged in the natural gas distribution business and that retention growth rate projections are available. From that group, I eliminated any companies that did not have investment-grade credit ratings from either Standard & Poor's ("S&P") or Moody's Investors Service ("Moody's") because such companies are not sufficiently comparable in terms of business and financial risk to Montana-Dakota. In addition, I excluded any companies that did not pay dividends, or that did not have future growth rate estimates provided by either Zacks or Thomson First Call. In order to ensure that the companies are primarily engaged in the natural gas distribution business, I eliminated any companies that did not derive at least 60 percent of their operating income from regulated natural gas distribution operations in 2014, or that did not have at least 60 percent of their total assets devoted to the provision of natural gas distribution service in 2014. As shown on page 1 of Schedule 3 of Exhibit No.___(JSG-2), eight companies met these criteria for inclusion in the proxy group.

Q19. How did you calculate the dividend yields for the companies in your proxy group?

A19. These calculations are shown on pages 1-2 of Schedule 4 of Exhibit No.___(JSG-2). For the price component of the calculation, I used the average of the high and

low stock prices for each month during the six-month period from November 2014 through April 2015. The average monthly dividend yields were calculated for each company by dividing the prevailing annualized dividend for the period by the average of the stock prices for each month. These dividend yields were then multiplied by the quarterly DCF model factor ($1 + 0.625g$) to arrive at the projected dividend yield component of the DCF model.

Q20. Please describe the method you used to estimate the future growth rate that investors expect from this group of companies.

A20. I developed three different DCF analyses of the proxy companies based on three different growth rate estimation methods. There are many methods that reasonably can be employed in formulating a growth rate estimate, but an analyst must attempt to ensure that the end result is an estimate that fairly reflects the forward-looking growth rate that investors expect.

In the first approach, I calculated retention growth (also known as "sustainable growth") forecasts from Value Line forecasts of dividends, earnings, and returns on equity. As a second approach, I conducted a Basic DCF analysis that relied on analysts' earnings forecasts for the growth rate component of the model. My third approach used a combination of the Value Line retention growth forecasts and analysts' earnings growth projections to produce a Blended Growth Rate Analysis.

F. Retention Growth Analysis

Q21. What approach did you use in calculating the long-term growth rate in your Retention Growth DCF analysis?

A21. In the Retention Growth DCF analysis, the long-term growth rate component is based on the calculation of retention growth rates using Value Line forecasts for each company. This Retention Growth DCF analysis rate better reflects investors' inflation expectations and the real requirements for long-term investments in plant under current market conditions.

Q22. Please describe the retention growth rate component of your analysis.

A22. I have relied upon Value Line projections of the retention growth rates that the proxy companies are expected to begin maintaining three to five years in the future. Although companies may experience extended periods of growth for other reasons, in the long-run, growth in earnings and dividends per share depends in part on the amount of earnings that is being retained and reinvested in a company. Thus, the primary determinants of growth for the proxy companies will be (i) their ability to find and develop profitable opportunities; (ii) their ability to generate profits that can be reinvested in order to sustain growth; and, (iii) their willingness and inclination to reinvest available profits. Expected future retention rates provide a general measure of these determinants of expected growth, particularly items (ii) and (iii).

Q23. How can a company's earnings retention rate affect its future growth?

A23. Retention of earnings causes an increase in the book value per share and, other factors being equal, increases the amount of earnings that is generated per share of common stock. The retention growth rate can be estimated by multiplying the expected retention rate (b) by the rate of return on common equity (r) that a company is expected to earn in the future. For example, a company that is expected to earn a return of 12 percent and retain 75 percent of its earnings might be expected to have a growth rate of 9 percent, computed as follows:

$$0.75 \times 12\% = 9\%$$

On the other hand, another company that is also expected to earn 12 percent but only retains 25 percent of its earnings might be expected to have a growth rate of 3 percent, computed as follows:

$$0.25 \times 12\% = 3\%$$

Thus, the rate of growth in a firm's book value per share is primarily determined by the level of earnings and the proportion of earnings retained in the company.

Q24. How did you calculate the expected future retention rates of the proxy companies?

A24. For most companies, Value Line publishes forecasts of data that can be used to estimate the retention rates that its analysts expect individual companies to have three to five years in the future. Since these retention rates are projected to occur several years in the future, they should be indicative of a normal expectation for a

primary underlying determinant of growth that would be sustainable indefinitely beyond the period covered by analysts' forecasts. While companies may have either accelerating or decelerating growth rates for extended periods of time, the retention growth rates expected to be in effect three to five years in the future generally represent a minimum "cruising speed" that companies can be expected to maintain indefinitely. The derivation of Value Line's retention growth rate forecasts for each of the proxy companies is shown on page 3 of Schedule 4 of Exhibit No.___(JSG-2). The projected earnings per share and projected dividends per share can be used to calculate the percentage of earnings per share that is being retained and reinvested in the company. This earnings retention rate is multiplied by the projected return on common equity to arrive at the projected retention growth rate. The average retention growth rate for the proxy companies is 4.85 percent.

Q25. How did you calculate the cost of capital using the Retention Growth DCF analysis?

A25. These calculations are shown on page 6 of Schedule 4 of Exhibit No.___(JSG-2). Again, the annual dividend yield is multiplied by the quarterly dividend adjustment factor (1 + 0.625g) and the product is added to the growth rate estimate to arrive at the investor-required return. Then, the investor return requirement is multiplied by the flotation cost adjustment factor, 1.04, to arrive at the Retention Growth DCF estimate of the cost of common equity capital for the proxy group companies. The Retention Growth DCF analysis indicates a cost of common equity for the proxy companies in a range from 6.88 percent to 10.88 percent. In this analysis, the median for the group is 8.40 percent and the third quartile is 9.00 percent.

G. Basic DCF Analysis

Q26. How did you estimate the expected future growth rate in your Basic DCF analysis?

A26. In my Basic DCF analysis, I have estimated expected future growth based on long-term earnings per share growth rate forecasts of investment analysts, which are an important source of information regarding investors' growth rate expectations. This Basic DCF analysis assumes that the analysts' earnings growth forecasts incorporate all information required to estimate a long-term expected growth rate for a company. I have used the consensus estimates of earnings growth forecasts published by Zacks and Thomson First Call (as reported on Yahoo! Finance) as the primary source for analysts' forecasts in my calculations. As shown on page 4 of Schedule 4 of Exhibit No.___(JSG-2), the average of the analysts' long-term earnings growth rate estimates for the natural gas distribution proxy companies is 5.47 percent.

Q27. How did you calculate the cost of capital using the Basic DCF analysis?

A27. These calculations are shown on page 7 of Schedule 4 of Exhibit No.___(JSG-2). Again, the annual dividend yield is multiplied by the quarterly dividend adjustment factor ($1 + 0.625g$) and this product is added to the growth rate estimate to arrive at the investor-required return. Then, the investor return requirement is multiplied by the flotation cost adjustment factor, 1.04, to arrive at the Basic DCF estimate of the cost of common equity capital for the proxy companies. The Basic DCF analysis indicates a cost of common equity for the proxy companies in a range from

7.60 percent to 10.36 percent. In this analysis, the median for the group is 9.12 percent and the third quartile is 10.03 percent.

H. Blended Growth Rate Analysis

Q28. How did you use your Blended Growth Rate Analysis to estimate investors' long-term growth rate expectations for the proxy companies?

A28. The Blended Growth Rate approach combines: (i) Value Line retention growth forecasts; and (ii) estimates of long-term earnings growth for each company that are published by various investment analysts.

Q29. How did you utilize the analysts' projected earnings growth rates and the projected earnings retention growth rates in estimating expected growth for the proxy companies in the Blended Growth Rate Analysis?

A29. As shown on page 5 of Schedule 4 of Exhibit No.___(JSG-2), I calculated a weighted average of the analysts' projected earnings growth rates and the projected retention growth rates to derive long-term growth rate estimates for each of the proxy companies. In these calculations, I gave a one-half weighting to the analysts' earnings growth rate projections and one-half weighting to the projected retention growth rates. The average of the blended growth rates for the proxy companies is 5.16 percent and the median is 5.41 percent.

Q30. How did you utilize these Blended Growth Rate estimates in estimating the return on common equity capital that investors require from the proxy companies?

A30. These calculations are shown on page 8 of Schedule 4 of Exhibit No.___(JSG-2). Again, the annual dividend yield for each company is multiplied by the quarterly dividend adjustment factor ($1 + 0.625g$), and this product is added to the growth rate estimate to arrive at the investor-required return. Finally, the investor return requirement is multiplied by the flotation cost adjustment factor, 1.04, to arrive at the cost of common equity capital for the proxy companies. This Blended Growth Rate Analysis indicates that the cost of common equity capital for the natural gas distribution proxy companies is in a range between 7.86 percent and 10.44 percent. In this analysis, the median for the group is 8.76 percent and the third quartile is 9.26 percent.

I. Risk Premium Analysis

Q31. Have you conducted additional analyses in determining the cost of equity capital for Montana-Dakota?

A31. Yes. The risk premium approach provides a general guideline for determining the level of returns that investors expect from an investment in common stocks. Investments in the common stocks of companies carry considerably greater risk than investments in bonds of those companies since common stockholders receive only the residual income that is left after the bondholders have been paid. In addition, in the event of bankruptcy or liquidation of the company, the stockholders' claims on the assets of a company are subordinate to the claims of

bondholders. This priority standing provides bondholders with greater assurances that they will receive the return on investment that they expect and that they will receive a return of their investment when the bonds mature. Accompanying the greater risk associated with common stocks is a requirement by investors that they can expect to earn, on average, a return that is greater than the return they could earn by investing in less risky bonds. Thus, the risk premium approach estimates the return investors require from common stocks by utilizing current market information that is readily available in bond yields and adding to those yields a premium for the added risk of investing in common stocks.

Investors' expectations for the future are influenced to a large extent by their knowledge of past experience. Ibbotson Associates annually publishes extensive data regarding the returns that have been earned on stocks, bonds and U.S. Treasury bills since 1926. Historically, the annual return on large company common stocks has exceeded the return on long-term corporate bonds by a premium of 570 basis points (5.7 percent) per year from 1926-2014.[20] When this premium is added to the average yield on Moody's corporate bonds for the period from November 2014 through April 2015 of 4.0 percent[21], the result is an investor return requirement for large company stocks of approximately 9.7 percent. However, investors in smaller companies expect higher returns over the long-term, due to the additional business and financial risks that smaller companies face. According to Ibbotson Associates, companies in the same size range as Montana-Dakota's South Dakota natural gas

---

[20] Ibbotson SBBI 2015 Classic Yearbook, at 91. Calculation: (12.1 percent – 6.4 percent = 5.7 percent)

[21] Exhibit No.___(JSG-2), Schedule 1, at 3.

distribution operations have had a premium of 1,420 basis points (14.2 percent) over the average return on long-term corporate bonds.[22] When added to the recent average corporate bond yield, this size-related premium suggests an expected return of 18.2 percent. This analysis indicates that the rate of return that I am proposing in this proceeding would be low relative to the historic risk premiums earned by similarly-sized unregulated companies.

J. Market DCF Analysis

Q32. What other analysis did you conduct in determining the cost of equity capital for Montana-Dakota?

A32. For an additional benchmark of the reasonableness of my DCF results, I calculated the current required return for the companies contained in the S&P 500. Using data provided by the Bloomberg Professional service, I performed a market capitalization-weighted DCF calculation on the S&P 500 companies based on the current dividend yields and long-term growth rate estimates as of April 30, 2015. These calculations are shown in Schedule 5 of Exhibit No.___(JSG-2). The current secondary market required ROE for the S&P 500 is 12.39 percent. This analysis indicates that the rate of return that I am proposing in this proceeding is low relative to the return required by investors who invest in the S&P 500.

[22] Ibbotson SBBI 2015 Classic Yearbook, at 91 and 109. Ibbotson Associates defines size ranges based on market capitalization. I calculated the implied market capitalization for Montana-Dakota's South Dakota natural gas distribution operations based on the Company's pro forma rate base for 2015 ($39.9 million) and the projected average equity ratio for 2015 (49.52 percent). This places Montana-Dakota's South Dakota natural gas distribution operations in Ibbotson Associates' tenth decile. Calculation: 20.6 percent – 6.4 percent = 14.2 percent

K. Relative Risk Analysis

Q33. Have you compared the risks faced by Montana-Dakota's South Dakota natural gas distribution operations with the risks faced by the proxy group of companies?

A33. Yes. There are four broad categories of risk that concern investors. These include:

1. Business Risk;
2. Regulatory Risk;
3. Financial Risk; and,
4. Market Risk.

Q34. Please describe the business risks inherent in the natural gas distribution industry.

A34. Business risk refers to the ability of the firm to generate revenues that exceed its cost of operations. Business risk exists because forecasts of both demand and costs are inherently uncertain. Markets change and the level of demand for the firm's output may be sufficient to cover its costs at one time and later become insufficient. Sunk investments in long-lived natural gas distribution assets, for which cost recovery occurs over a period of thirty years or more, are subject to enormous uncertainties and risks that demand, costs, supply, and competition may change in ways that adversely affect the value of the investment.

Q35. What are some of the business risks faced by Montana-Dakota's South Dakota natural gas distribution operations?

A35. The Company's natural gas distribution operations in South Dakota face many of the same business risks that are associated with other natural gas distribution companies. However, Montana-Dakota's South Dakota natural gas distribution

operations face some particular risks that distinguish the Company from the proxy group of distribution companies, including being substantially smaller than the proxy group companies and providing service in a territory with a relatively undiversified local economy that is heavily dependent on agriculture and tourism.

As shown on page 1 of Schedule 3 of Exhibit No.___(JSG-2), Montana-Dakota's South Dakota natural gas distribution operations are considerably smaller than the operations of any of the proxy companies and a small fraction of the size of the typical proxy company. For example, the rate base of Montana-Dakota's South Dakota natural gas distribution operations are equal to only 0.84 percent of the total assets of the median proxy company. Similarly, Montana-Dakota's South Dakota natural gas distribution operating revenues and operating income are only 3.26 percent and 1.33 percent of the level for the median proxy company, respectively. Thus, depending upon the measure of size, the typical proxy company is somewhere between 31 and 119 times the size of Montana-Dakota's South Dakota natural gas distribution operations. The Company's smaller size has significant implications for business risks. Ibbotson Associates has documented the significantly higher returns that generally have been associated with small companies.

Montana-Dakota's relatively small natural gas distribution operations in South Dakota are heavily dependent upon a relatively undiversified local economy. With its small revenue base, Montana-Dakota's South Dakota natural gas distribution operations are subject to slightly greater risk that a major employer or industry, such as agriculture, tourism, or government services, might experience a downturn

that would significantly affect demand for natural gas distribution in the service territory.

As discussed in the testimony of Company witness Tamie Aberle, Montana-Dakota is proposing to implement an infrastructure rider for its South Dakota natural gas distribution operations. Schedule 6 of Exhibit No.___(JSG-2) shows that 84.9 percent of the customers served by the proxy companies are located in jurisdictions that have capital tracking mechanisms similar to Montana-Dakota's proposed infrastructure rider for its South Dakota natural gas distribution operations. As a result, these companies have less risk than Montana-Dakota's South Dakota natural gas distribution business. If Montana-Dakota's request to implement an infrastructure rider in South Dakota is approved, all else being equal, the Company will not be less risky than the proxy group companies and no adjustment to the required rate of return on common equity is necessary unless the proposed tracking mechanism is rejected, in which case Montana-Dakota's South Dakota natural gas distribution operations would be more risky than the proxy group companies.

Considering only its smaller size, Montana-Dakota's South Dakota natural gas distribution operations might require a return that is more than 100 basis points higher than the return required for the typical proxy company. In addition, the Company also serves a relatively undiversified local economy in South Dakota, and there is significant need for capital expenditures even as average use per customer has been declining. Furthermore, Montana-Dakota's South Dakota natural gas distribution business also generally faces above-average rate design risk relative to

the proxy group. In summary, Montana-Dakota's South Dakota natural gas distribution operations are riskier than the operations of the proxy companies.

Q36. What are the regulatory risks faced by Montana-Dakota's South Dakota natural gas utility operations?

A36. Regulatory risk is closely related to business risk and might be considered just another aspect of business risk. To the extent that the market demand for a natural gas distribution company's services is sufficiently strong that the company could conceivably recover all of its costs, regulators may nevertheless set the rates at a level that will not allow for full cost recovery. In effect, the binding constraint on natural gas distribution companies is often posed by regulation rather than by the working of market forces. One purpose of regulation is to provide a substitute for competition where markets are not workably competitive. As such, regulation often attempts to replicate the type of cost discipline and risks that might typically be found in highly competitive industries.

Moreover, there is the perceived risk that regulators may set allowed returns so low as to effectively undermine investor confidence and jeopardize the ability of natural gas distribution companies to finance their operations. Thus, in some instances, regulation may substitute for competition and in other instances it may limit the potential returns available to successful competitors. In either case, regulatory risk is an important consideration for investors and has a significant effect on the cost of capital for all firms in the natural gas distribution industry.

The regulatory environment can significantly affect both the access to, and cost of capital in several ways. As noted by Moody's, "[f]or rate-regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations."[23] Moody's further noted that:

> Utility rates are set in a political/regulatory process rather than a competitive or free-market process; thus, the Regulatory Framework is a key determinant of the success of utility. The Regulatory Framework has many components: the governing body and the utility legislation or decrees it enacts, the manner in which regulators are appointed or elected, the rules and procedures promulgated by those regulators, the judiciary that interprets the laws and rules and that arbitrates disagreements, and the manner in which the utility manages the political and regulatory process. In many cases, utilities have experienced credit stress or default primarily or at least secondarily because of a break-down or obstacle in the Regulatory Framework – for instance, laws that prohibited regulators from including investments in uncompleted power plants or plants not deemed "used and useful" in rates, or a disagreement about rate-making that could not be resolved until after the utility had defaulted on its debts.[24]

Regulatory Research Associates assigns a rating of Average / 3 to the South Dakota Public Utilities Commission, its sixth highest rating.[25] This rating suggests slightly above average regulatory risk for Montana-Dakota's South Dakota natural gas distribution operations.

Q37. Would you please describe Montana-Dakota's relative financial risks?

---

23 Moody's Investors Service, *Regulated Electric and Gas Utilities*, December 23, 2013, at 9.
24 *Ibid.*
25 Regulatory Research Associates, South Dakota Regulatory Review, May 8, 2015.

A37. Financial risk exists to the extent that a company incurs fixed obligations in financing its operations. These fixed obligations increase the level of income which must be generated before common stockholders receive any return and serve to magnify the effects of business and regulatory risks. Fixed financial obligations also increase the probability of bankruptcy by reducing the company's financial flexibility and ability to respond to adverse circumstances. One possible indicator of investors' perceptions of relative financial risk in this case might be obtained from credit ratings. Because Montana-Dakota, as a division of MDU Resources, does not have its own bonds outstanding, it is difficult to make direct comparisons between the ratings of Montana-Dakota and the proxy group. However, page 2 of Schedule 3 of Exhibit No.___(JSG-2) shows the credit ratings assigned by S&P and Moody's to each of the companies in the comparison group and MDU Resources.

The median S&P credit rating for companies in the proxy group is A-. By comparison, MDU Resources' long-term rating from S&P is BBB+. This suggests that the perceived business and financial risk of MDU Resources' bonds is slightly higher than that of the typical company in the comparison group.

The capital structure data on Schedule 7 of Exhibit No.___(JSG-2) show that Montana-Dakota's filed common equity ratio of 49.52 percent is fairly close to the 46.67 percent median for the proxy companies as of December 31, 2014. This slightly above average common equity ratio, which is offset somewhat by the Company's below-average credit rating, suggests average financial risk for Montana-Dakota's South Dakota natural gas distribution operations.

Q38. Would you please describe Montana-Dakota's market risks?

A38. Market risk is associated with the changing value of all investments because of business cycles, inflation, and fluctuations in the general cost of capital throughout the economy. Different companies are subject to different degrees of market risk largely as a result of differences in their business and financial risks. Overall, the market risk of Montana-Dakota's South Dakota natural gas distribution business is comparable to that of the companies in the natural gas distribution comparison group.

Q39. How do the overall risks of the proxy companies compare with the risks faced by Montana-Dakota's South Dakota natural gas distribution operations?

A39. Montana-Dakota's South Dakota natural gas distribution operations face overall risks that are near the top of the range relative to those of the proxy companies. Although it has financial risks that are average relative to the proxy companies, Montana-Dakota's South Dakota natural gas distribution operations have business and regulatory risks that are above average. In addition to its exceptionally small size relative to the proxy companies and its exposure to a relatively undiversified local economy that is heavily dependent on agriculture and tourism, Montana-Dakota's South Dakota natural gas distribution operations are faced with elevated capital expenditures to accommodate customer growth and to support system reliability. These considerations lead me to conclude that investors appraise the overall risks of Montana-Dakota's South Dakota natural gas distribution operations to be above average relative to those of the proxy companies. Consequently, Montana-Dakota's South Dakota natural gas distribution business requires an

allowed rate of return that is at the high end of the range for the companies in the proxy group indicated by my DCF analyses.

III. SUMMARY AND CONCLUSIONS

Q40. Please summarize the results of your cost of capital study.

A40. I conducted three DCF analyses on a group of natural gas distribution companies that have a range of risks that is roughly comparable to those of Montana-Dakota's South Dakota natural gas distribution operations. These results are summarized as follows:

Table 2: Summary of DCF Results

	Retention Growth DCF Analysis	Basic DCF Analysis	Blended Growth Rate DCF Analysis
High	10.88%	10.36%	10.44%
3rd Quartile	9.00%	10.03%	9.26%
Median	8.40%	9.12%	8.76%
1st Quartile	7.83%	8.61%	8.20%
Low	6.88%	7.60%	7.86%

In addition, I conducted two risk premium analyses and a market DCF analysis of the S&P 500 to test the reasonableness of my DCF analyses. Those results are summarized as follows:

Table 3: Benchmark Risk Premium and Market DCF Analyses

	Return
Risk Premium (Long-Term Corporate Bonds)	
vs. Large Company Stocks	9.7%
vs. Small Company Stocks	18.2%
Market DCF (S&P 500)	12.4%

My risk premium and market DCF analyses suggest that the DCF results generally are low relative to current market benchmarks. In particular, all of the DCF return estimates are considerably below the 18.2 percent risk premium return benchmark for companies in Montana-Dakota's relative size range. Similarly, the DCF estimates for the natural gas distribution proxy companies are well below the 12.4 percent market DCF estimate for the S&P 500 companies.

Q41. What rate of return on common equity do you recommend for Montana-Dakota's South Dakota natural gas distribution operations in this proceeding?

A41. My analyses indicate that an appropriate rate of return on common equity for Montana-Dakota's South Dakota natural gas distribution operations at this time is 10.0 percent, which is slightly below the third quartile of the range for my Basic DCF analysis and between the third quartile and the high of the range for my Retention Growth DCF and Blended Growth DCF analyses. This recommended return reflects my assessment that the overall risks of Montana-Dakota's South Dakota natural gas distribution operations are above average relative to those of the proxy companies. Although the Company has financial risks that are average relative to the proxy companies, it has business risks that are well above average. In addition to its exceptionally small size relative to the proxy companies, Montana-Dakota's South Dakota natural gas distribution operations are faced with elevated capital expenditures to accommodate customer growth and to support system reliability. Thus, my recommended return is appropriately positioned to reflect the risks faced by Montana-Dakota's South Dakota natural gas distribution operations relative to the risks faced by the proxy companies.

Q42. Does this conclude your Prepared Direct Testimony?

A42. Yes.