

Exhibit No.:  
Witness: Michael Gorman  
Type of Exhibit: Rebuttal Testimony  
Issue: Revenue Requirement  
Sponsoring Party: The Office of Public Counsel  
Case No.: ER-2009-0090

**Before the Public Service Commission  
of the State of Missouri**

\_\_\_\_\_)  
In the Matter of the Application of )  
Aquila, Inc. dba KCP&L Greater )  
Missouri Operations Company for ) Case No. ER-2009-0090  
Approval to Make Certain Changes )  
in its Charges for Electric Service )

Rebuttal Testimony and Schedules of

**Michael Gorman**

On behalf of

**The Office of Public Counsel**

Project 9074  
March 13, 2009





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**Rebuttal Testimony of Michael Gorman**

1    **Q     PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2    A     My name is Michael Gorman and my business address is 16690 Swingley Ridge  
3           Road, Suite 140, Chesterfield, Missouri 63017.

4    **Q     ARE YOU THE SAME MICHAEL GORMAN WHO FILED TESTIMONY**  
5           **PREVIOUSLY IN THIS PROCEEDING?**

6    A     Yes, I am.

7    **Q     WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS**  
8           **PROCEEDING?**

9    A     I will respond to Aquila, Inc. dba KCP&L Greater Missouri Operations Company  
10          (“GMO” or “Aquila Missouri” or “Company”) cost of capital witness Dr. Samuel C.  
11          Hadaway and his proposed return on equity and cost of debt for Saint Joseph Light &  
12          Power (“SJLP”).

1 **Return on Common Equity**

2 **Q WHAT RETURN ON COMMON EQUITY IS GMO PROPOSING FOR THIS**  
3 **PROCEEDING?**

4 A GMO is proposing to set rates based on a return on equity of 10.75%. GMO's return  
5 on equity proposal is based on the analysis and judgment of Dr. Samuel Hadaway.  
6 Dr. Hadaway's results are summarized at page 37 of his direct testimony.

7 **Q DO DR. HADAWAY'S METHODOLOGIES SUPPORT HIS 10.75% RETURN ON**  
8 **EQUITY FOR HIS PROXY GROUP?**

9 A No. As discussed in detail below, reflecting current market data and properly  
10 applying his models, Dr. Hadaway's own analyses would support a return on equity in  
11 the range of 9.4% to 10.8%. These adjustments to Dr. Hadaway's return on equity  
12 estimates support my recommended return on equity of 10.30%.

13 **Q PLEASE DESCRIBE THE METHODOLOGY SUPPORTING DR. HADAWAY'S**  
14 **RETURN ON COMMON EQUITY RECOMMENDATION.**

15 A Dr. Hadaway develops his return on common equity recommendation using three  
16 versions of the DCF model, and a utility risk premium analysis. Further, he tests his  
17 results using risk premium analyses conducted by Ibbotson Associates as published  
18 in Morningstar. The results of Dr. Hadaway's return on equity analysis are shown at  
19 page 37 of his direct testimony. I have summarized Dr. Hadaway's results below in  
20 Table 1 under column 1. Under column 2, I show the results of Dr. Hadaway's  
21 analyses adjusted for updated data and more reasonable application of the models.

1 As shown below in Table 1, using consensus economists' projection of GDP  
 2 growth rather than Dr. Hadaway's inflated GDP growth estimates, Dr. Hadaway's own  
 3 DCF analyses would support a return on equity for GMO in the range of 9.4% to  
 4 11.2%, with a midpoint of 10.3%. Proper adjustments to Dr. Hadaway's Ibbotson risk  
 5 premium estimate to reflect GMO's below market risk would reduce this estimate from  
 6 11.49% to 10.41%.

<b>TABLE 1</b>		
<b><u>Summary of Dr. Hadaway's ROE Estimate</u></b>		
<b><u>Description</u></b>	<b><u>Hadaway Results</u></b>	<b><u>Adjusted Hadaway Results</u></b>
	<b>(1)</b>	<b>(2)</b>
<b><u>Electric DCF Analysis</u></b>		
Constant Growth (Analysts' Growth)	11.1% - 11.2%	11.1% - 11.2%
Constant Growth (GDP Growth)	11.0%	9.4%
Multi-Stage Growth Model	<u>10.8%</u>	<u>9.4%</u>
Reasonable DCF Range	10.8% - 11.2%	9.4% - 11.2%
<b><u>Risk Premium Analysis</u></b>		
Utility Debt + Electric Risk Premium	11.10%	11.10%
Ibbotson Risk Premium Analysis	11.49%	<u>10.41%</u>
Average Risk Premium		10.76%
Source: Hadaway Direct at 37.		

7 **Q PLEASE DESCRIBE DR. HADAWAY'S CONSTANT GROWTH DCF ANALYSES.**

8 A Dr. Hadaway developed two constant growth DCF analyses. The first one is based  
 9 on a recent stock price and an average of three growth rates: (1) *Value Line*;  
 10 (2) Zacks; and (3) Thomson. This version of the DCF model is shown on  
 11 Dr. Hadaway's Schedule SCH-7, page 2 of 5.

12 The second constant growth DCF analysis is based on Dr. Hadaway's GDP  
 13 growth rate projection and is shown on his Schedule SCH-5, page 3 of 5.

1 **Q IN WHAT WAY DID DR. HADAWAY OVERSTATE HIS DCF ESTIMATES?**

2 A In his constant growth DCF model based on the GDP growth and his multi-stage  
3 growth model, Dr. Hadaway used a GDP growth rate of 6.5%. This GDP growth is  
4 excessive and not reflective of current market expectations.

5 **Q HOW DID DR. HADAWAY DEVELOP HIS GDP GROWTH RATE?**

6 A He states that the GDP growth rate is based on the achieved GDP growth over the  
7 last 10, 20, 30, 40, 50, and 60-year periods. Dr. Hadaway's projected GDP growth  
8 rate is unreasonable. Historical GDP growth over the last 20 and 40-year periods  
9 was strongly influenced by the actual inflation rate experienced over that time period.

10 **Q WHY IS DR. HADAWAY'S GDP GROWTH ESTIMATE EXCESSIVE IN**  
11 **COMPARISON TO THAT OF PUBLISHED MARKET ANALYSTS?**

12 A The consensus economists' projected GDP growth rate is much lower than the GDP  
13 growth rate used by Dr. Hadaway in his DCF analysis. A comparison of  
14 Dr. Hadaway's GDP growth rate and consensus economists' projected GDP growth  
15 over the next five and ten years is shown below in Table 2. As shown in the table  
16 below, Dr. Hadaway's GDP rate of 6.5% reflects real GDP of 3.2% and an inflation  
17 GDP of 3.3%. However, consensus economists' projections of nominal GDP include  
18 real GDP and GDP inflation projections over the next five and ten years of 2.2%, and  
19 2.1%, respectively.<sup>1</sup>

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<sup>1</sup> *Blue Chip Economic Indicators*, October 10, 2008, at 15.

1 As is clearly evident in the table below, Dr. Hadaway's historical GDP growth  
2 reflects historical inflation, which is much higher than, and not representative of,  
3 consensus market expected forward-looking inflation.

<b><u>Description</u></b>	<b><u>GDP Inflation</u></b>	<b><u>Real GDP</u></b>	<b><u>Nominal GDP</u></b>
Dr. Hadaway	3.3%	3.2%	6.5%
Consensus 5-Year Projection	2.2%	2.8%	5.0%
Consensus 10-Year Projection	2.1%	2.7%	4.8%

Source: *Blue Chip Economic Indicators*, October 10, 2008, at 15.

4 As such, Dr. Hadaway's 6.5% nominal GDP growth rate is not reflective of  
5 consensus market expectations, and should be rejected.

6 **Q HOW DOES DR. HADAWAY'S GDP GROWTH RATE OF 6.5% COMPARE TO A**  
7 **LONG-TERM GDP GROWTH RATE PRODUCED USING MORNINGSTAR'S**  
8 **METHODOLOGY?**

9 A Morningstar's prescribed methodology for assessing the current market outlook for  
10 long-term GDP growth rate is tied to the historical real GDP growth rate of  
11 approximately 3.4%,<sup>2</sup> and a future inflation outlook as implied by Treasury Inflation-  
12 Protected Securities (TIPS). Specifically, the Treasury market inflation outlook can be  
13 approximated by reviewing the difference between the yield on 20-year Treasury  
14 bond securities, and 20-year TIPS, as discussed on pages 24 and 25 of my direct

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<sup>2</sup> Morningstar, Inc., 2008 Ibbotson® SBBI® Valuation Yearbook at 70.

1 testimony. As shown on the attached Rebuttal Schedule MPG-1, this methodology  
2 prescribes a long-term inflation outlook of 1.10%. The long-term sustainable GDP  
3 growth rate using Morningstar's methodology is then the sum of the historical real  
4 GDP growth rate of 3.40%, and the long-term inflation outlook of 1.10%, for a real  
5 nominal GDP growth rate of 4.5%.

6 **Q DID YOU USE MORNINGSTAR'S METHODOLOGY?**

7 A No. As I discussed in my direct testimony, the consensus GDP growth forecast  
8 represents the most likely views of market participants, because it is based on  
9 published economist projections, and is an explicit long-term consensus analysts'  
10 projection of GDP growth. Therefore, I propose the use of the long-term consensus  
11 economists' projected GDP growth rate.

12 **Q HOW WOULD DR. HADAWAY'S DCF ANALYSES CHANGE IF CURRENT**  
13 **MARKET-BASED GDP GROWTH RATE PROJECTIONS ARE INCLUDED IN HIS**  
14 **ANALYSIS RATHER THAN HIS EXCESSIVE GDP GROWTH RATE?**

15 A As shown on Rebuttal Schedule MPG-2, I updated Dr. Hadaway's DCF analyses  
16 using a GDP growth rate of 4.9%. This GDP growth rate represents the average of  
17 the 5- and 10-year consensus economists' projected GDP growth rate of 5.0% and  
18 4.8%, respectively, as published in the *Blue Chip Economic Indicators* on October 10,  
19 2008.

20 As shown on page 1 of Rebuttal Schedule MPG-1, using this consensus  
21 economists' projected GDP growth rate reduces Dr. Hadaway's DCF results.



**TABLE 3**

**Adjusted Hadaway DCF**

<b><u>Description</u></b>	<b><u>Hadaway DCF<sup>1</sup></u></b>	<b><u>Adjusted DCF<sup>2</sup></u></b>
Constant Growth (Analysts' Growth)	11.2%	11.2%
Constant Growth (GDP Growth)	11.0%	9.4%
Multi-Stage Growth Model	<u>10.8%</u>	<u>9.4%</u>
Range	10.8% - 11.2%	9.4% - 11.2%
Midpoint	11.0%	10.3%

Sources:

<sup>1</sup> Hadaway Direct Testimony at 37.

<sup>2</sup> Rebuttal Schedule MPG-2.

1   **Q    DID YOU INCLUDE A QUARTERLY COMPOUNDING ADJUSTMENT TO THE DCF**  
2   **NUMBERS SHOWN IN TABLE 3 ABOVE?**

3   **A**No. For the reasons set out in my direct testimony, including a quarterly  
4   compounding adjustment to a DCF return will overstate the utility's cost of capital. As  
5   described in that testimony, the utility does not pay the reinvestment return on  
6   quarterly dividend payments, and therefore the reinvestment return or quarterly  
7   compounding of the dividend payment, is not a portion of the utility's cost of capital.  
8   Therefore, the quarterly dividend payment and the associated reinvestment return  
9   should not be included in the utility's authorized return on equity.

10   **Q    WITH THESE ADJUSTMENTS, WHAT RETURN ON EQUITY WOULD**  
11   **DR. HADAWAY'S DCF MODELS SUGGEST IS A FAIR RETURN ON EQUITY FOR**  
12   **GMO IN THIS PROCEEDING?**

13   **A**Reflecting a consensus economists' GDP growth forecast would reduce  
14   Dr. Hadaway's average DCF result from 11.0% to 10.3%.

1 **Q PLEASE DESCRIBE DR. HADAWAY'S UTILITY RISK PREMIUM ANALYSIS.**

2 A Dr. Hadaway's utility bond yield versus authorized return on common equity risk  
3 premium is shown on his Schedule SCH-8, pages 1 and 2. As shown on this  
4 schedule, Dr. Hadaway compares the contemporary Moody's average public utility  
5 bond yield and the authorized regulatory commission return on common equity for  
6 electric utility companies over the period 1980 through 2007. Based on this analysis,  
7 Dr. Hadaway estimates an average indicated equity risk premium over contemporary  
8 utility bond yields of 3.17%.

9 Dr. Hadaway then adjusts this average equity risk premium using a regression  
10 analysis based on an expectation that there is an ongoing inverse relationship  
11 between interest rates and equity risk premiums. Based on this regression analysis,  
12 Dr. Hadaway increases his equity risk premium from the 3.17% reflected in his  
13 analysis, up to 4.11%. He then adds this inflated equity risk premium to a projected  
14 "BBB" bond yield of 6.99% to produce a return on equity of 11.10% for GMO.

15 **Q IS DR. HADAWAY'S UTILITY RISK PREMIUM ANALYSIS REASONABLE?**

16 A No. Dr. Hadaway adjusts his equity risk premium of 3.17% to reflect the inverse  
17 relationship between interest rates and utility risk premiums. This adjustment is  
18 inappropriate and not consistent with academic literature that finds this relationship  
19 should change with risk changes and not simply changes to interest rates.

1 Q DOES DR. HADAWAY'S RISK PREMIUM ANALYSIS SUPPORT A RETURN ON  
2 EQUITY OF 11.10%?

3 A No. His equity risk premium estimate of 4.11% is overstated. The common equity  
4 risk premium is approximately 3.69% as shown on Schedule MPG-16 of my direct  
5 testimony.

6 Q WHY IS DR. HADAWAY'S USE OF A SIMPLE INVERSE RELATIONSHIP  
7 BETWEEN INTEREST RATES AND EQUITY RISK PREMIUMS NOT  
8 REASONABLE?

9 A Dr. Hadaway's belief that there is a simplistic inverse relationship between equity risk  
10 premiums and interest rates is not supported by academic research. While academic  
11 studies have shown that, in the past, there has been an inverse relationship with  
12 these variables, researchers have found that the relationship changes over time and  
13 is influenced by changes in perception of the risk of bond investments relative to  
14 equity investments, and not simply changes to interest rates.<sup>3</sup>

15 In the 1980s, equity risk premiums were inversely related to interest rates but  
16 that was likely attributable to the interest rate volatility that existed at that time. As  
17 such, when interest rates were more volatile, the relative perception of bond  
18 investment risk increased relative to the investment risk of equities. This changing  
19 investment risk perception caused changes in equity risk premiums.

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<sup>3</sup>"The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts," Robert S. Harris and Felicia C. Marston, *Journal of Applied Finance*, Volume 11, No. 1, 2001 and "The Risk Premium Approach to Measuring a Utility's Cost of Equity," Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *Financial Management*, Spring 1985.

1           In today's marketplace, interest rate variability is not as extreme as it was  
2 during the 1980s.<sup>4</sup> Nevertheless, changes in the perceived risk of bond investments  
3 relative to equity investments still drive changes in equity premiums. However, a  
4 relative investment risk differential cannot be measured simply by observing nominal  
5 interest rates. Changes in nominal interest rates are highly influenced by changes to  
6 inflation outlooks, which also change equity return expectations. As such, the  
7 relevant factor needed to explain changes in equity risk premiums is the relative  
8 changes to the risk of equity versus debt securities investments, not simply changes  
9 to interest rates.

10           Importantly, Dr. Hadaway's analysis simply ignores investment risk  
11 differentials. He bases his adjustment to the equity risk premium exclusively on  
12 changes in nominal interest rates. This is a flawed methodology and does not  
13 produce accurate or reliable risk premium estimates. His results should be rejected.

14 **Q       HAVE YOU ADJUSTED DR. HADAWAY'S RISK PREMIUM RETURN ON EQUITY,**  
15 **CORRECTING FOR HIS INAPPROPRIATE USE OF THE INVERSE**  
16 **RELATIONSHIP YOU DISCUSSED ABOVE?**

17 **A**No, I have not. Even though I disagree with Dr. Hadaway's methodology of  
18 estimating his risk premium, the return on equity produced by his model is reasonable  
19 in light of the current market conditions.

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<sup>4</sup>Morningstar SBBI, 2007 Yearbook at 112.

1    **Q     DID DR. HADAWAY PERFORM ANY TESTS OF HIS RISK PREMIUM ANALYSIS**  
2    **RESULTS?**

3    A     Yes. Dr. Hadaway compared his utility risk premium analysis to studies performed by  
4    Ibbotson Associates. Dr. Hadaway states that Ibbotson Associates studied the return  
5    on common stocks versus corporate bonds for the period 1926 through 2007. The  
6    Ibbotson study found that the arithmetic mean risk premium was 6.1%, and the  
7    geometric mean return was 4.5%. He states that using the geometric mean return of  
8    4.5%, and his projected 6.99% “BBB” utility bond yield, would produce an indicated  
9    equity return of 11.49% for GMO. (Hadaway Direct at 36).

10   **Q     DO THE INDICATED RISK PREMIUM RESULTS FROM THE IBBOTSON**  
11   **ASSOCIATES STUDY SUPPORT A RETURN ON COMMON EQUITY FOR GMO**  
12   **OF 11.49% AS ESTIMATED BY DR. HADAWAY?**

13   A     No. There are several flaws in this analysis. First, the Ibbotson Associates study is  
14   based on common equity returns and equity risk premiums for the overall market.  
15   This study is based on the returns for the S&P 500, not electric utilities. Dr. Hadaway  
16   did not, and cannot, show that the S&P 500 companies reflect risk comparable to  
17   GMO as a regulated electric utility.

18           In fact, it is widely recognized that electric utility risk is considerably lower than  
19   that of the overall market. This is evident by a review of the beta coefficients  
20   measured by *Value Line* for the comparable utility companies, as illustrated on  
21   Schedule MPG-19 of my direct testimony. As shown on this schedule, the average  
22   beta for my comparable group is 0.76. Therefore, utility company stock market risk is  
23   approximately 76% (beta estimate) of that of the overall market. Hence, while the  
24   equity risk premiums derived from the Ibbotson study may be appropriate for the

1 overall market, they significantly overstate a reasonable equity risk premium for a low  
2 risk regulated electric utility such as GMO. Therefore, Dr. Hadaway's use of the  
3 Ibbotson study's equity risk premium to produce a return on common equity for GMO  
4 is unreasonable and should be rejected.

5 **Q CAN THE RISK PREMIUM STUDY PUBLISHED BY IBBOTSON BE USED TO**  
6 **DEVELOP A COMMON EQUITY ESTIMATE FOR GMO?**

7 A Only generally. By recognizing electric utilities like GMO have much lower risk than  
8 the overall market, the equity risk premiums developed by Ibbotson (4.5%) should be  
9 adjusted by a factor of approximately 76% or the average beta of my comparable  
10 group as published by *The Value Line Investment Survey*. Using a 76% adjustment  
11 factor to reflect GMO's lower than market risk, the equity risk premiums of these  
12 studies, adjusted for the lower risk, would be reduced to 3.42% (4.5% x 76%).  
13 Adding a 3.42% equity risk premium to Dr. Hadaway's cost of a "BBB" rated electric  
14 utility bond of 6.99% would indicate a return on common equity of 10.41%.

15 **Q CONSIDERING THE ADJUSTMENTS YOU MADE TO DR. HADAWAY'S RETURN**  
16 **ON EQUITY STUDY RESULTS, WHAT IS A REASONABLE RANGE OF A**  
17 **RETURN ON EQUITY FOR GMO?**

18 A A reasonable return on equity range for GMO is 9.4% to 10.8%, based on my  
19 adjustments to Dr. Hadaway's DCF and risk premium studies. As discussed in detail  
20 above, when more prudent assessments of utilities' investment risk in today's  
21 marketplace are considered, I have estimated the current investor required return for  
22 an electric utility company such as GMO and provided a reasonable and accurate  
23 range of returns demanded by the marketplace. Thus, my recommended return on

1 equity of 10.30% will fairly compensate GMO for its investment risk of providing  
2 regulated integrated utility service in Missouri.

3 **Cost of Debt**

4 **Q ARE YOU PROPOSING ANY ADJUSTMENT TO SJLP'S EMBEDDED DEBT**  
5 **COST?**

6 A While I do not propose specific adjustments to SJLP's embedded debt cost, I would  
7 note that that embedded debt cost appears to be significantly higher than the  
8 embedded debt cost of Missouri Public Service ("MPS") and other Missouri utilities.  
9 Further, because SJLP has not refinanced debt, its embedded debt cost is well above  
10 market and industry costs.

11 **Q HOW DO OTHER MISSOURI ELECTRIC UTILITIES' DEBT COSTS COMPARE TO**  
12 **SJLP?**

13 A SJLP's embedded debt cost of 7.62% is significantly higher than other Missouri  
14 utilities that have recently made rate filings. Generally, I reviewed the embedded  
15 debt cost of other Missouri electric utilities with a "BBB" bond rating. These utilities  
16 include AmerenUE, Kansas City Power & Light, and Empire District Electric. Based  
17 on recent filings by those companies, their embedded debt costs were as shown in  
18 Table 4 below.

**TABLE 4**

**Proxy Missouri Utility Embedded Debt Cost**

<u>Utility</u>	<u>Bond Rating</u> <sup>1</sup>	<u>Embedded Debt Cost</u>
AmerenUE	BBB-	5.774% <sup>2</sup>
KCPL	BBB	6.320% <sup>3</sup>
Empire District	BBB-	6.750% <sup>4</sup>
MPS		6.83%
SJLP		7.62%

Sources:

<sup>1</sup>www.standardandpoors.com

<sup>2</sup>AmerenUE Direct Testimony, Michael G. O'Bryan Schedule MGO-E5, Docket No. ER-2008-0318.

<sup>3</sup>Hadaway Direct Testimony at 5, Docket No. ER-2009-0089.

<sup>4</sup>Staff True-Up Direct Testimony, Mark L. Oligschlaeger Schedule 3-1, Line 13, Docket No. ER-2008-0093.

1 As shown above in Table 4, other Missouri utilities have embedded debt costs  
2 in the range of approximately 5.8% to 6.8%. MPS's embedded debt cost generally  
3 falls within this range.

4 SJLP's embedded debt cost is significantly above market and deserves some  
5 attention and comment by GMO in this proceeding. Specifically, the Commission  
6 should direct GMO to identify how it can refinance SJLP's embedded debt to bring it  
7 down to market levels, and explain all restrictions it will encounter for refinancing this  
8 debt. Refinancing is critical to allow SJLP's customers to benefit from lower capital  
9 market costs.



1 Q IF THE COMMISSION WOULD BELIEVE AN IMPUTED DEBT COST FOR SJLP IS  
2 APPROPRIATE, DO YOU RECOMMEND AN ADJUSTED EMBEDDED DEBT  
3 COST FOR SJLP?

4 A If the Commission finds an imputed debt cost for SJLP is justified, then I recommend  
5 an adjusted embedded debt cost of 6.83% for SJLP. This is based on MPS's  
6 embedded cost of debt.

7 Q DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

8 A Yes.

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# Aquila Missouri

## Long-Term Sustainable GDP Growth Rate

<u>Line</u>	<u>Date</u>	<u>20-Year Yield<sup>1</sup></u>		<u>Inflation</u>
		<u>Treasury</u>	<u>TIPS</u>	
		(1)	(2)	(3)
1	02/27/09	3.87%	2.35%	1.52%
2	02/20/09	3.80%	2.24%	1.56%
3	02/13/09	3.80%	2.25%	1.55%
4	02/06/09	3.86%	2.40%	1.46%
5	01/30/09	3.74%	2.43%	1.31%
6	01/23/09	3.52%	2.54%	0.98%
7	01/16/09	3.23%	2.29%	0.94%
8	01/09/09	3.40%	2.57%	0.83%
9	01/02/09	3.02%	2.32%	0.70%
10	12/26/08	2.93%	2.16%	0.77%
11	12/19/08	3.04%	2.17%	0.87%
12	12/12/08	3.38%	2.44%	0.94%
13	12/05/08	3.44%	2.51%	0.93%
14	<b>Average</b>	<b>3.46%</b>	<b>2.36%</b>	<b>1.10%</b>
15	Real GDP (1929-2007) <sup>2</sup>			3.40%
16	<b>Long-Term Sustainable GDP Growth</b>			<b><u>4.50%</u></b>

Sources:

<sup>1</sup> St. Louis Federal Reserve Bank.

<sup>2</sup> Morningstar, Inc. 2008 Ibbotson SBBI Valuation Yearbook, at 70.

# Aquila Missouri

## Summary of Adjusted Hadaway DCF

<u>Line</u>	<u>Description</u>	<u>Hadaway<sup>1</sup></u> (1)	<u>Hadaway</u> <u>Adjusted<sup>2/3</sup></u> (2)
<b><u>Constant Growth DCF</u></b>			
1	Average	11.2%	11.2%
2	Median	11.1%	11.1%
<b><u>Long-Term Constant Growth DCF</u></b>			
3	Average	11.0%	9.4%
4	Median	11.0%	9.4%
<b><u>Multi-Stage Growth DCF</u></b>			
5	Average	10.8%	9.4%
6	Median	10.8%	9.4%

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Sources & Notes:

<sup>1</sup> Schedule SCH-7, Page 1 of 5.

<sup>2</sup> Rebuttal Schedule MPG-2, Pages 2 to 4.

<sup>3</sup> The adjustment reflects changing the GDP Growth Rate to 4.90%.

# Aquila Missouri

## Adjusted Hadaway Constant Growth DCF Model Analysts' Growth Rates

Line	Company	Recent Stock Price (1)	Next Year's Dividend (2)	Dividend Yield (3)	Analysts' Growth Rates			Average Growth Rate (7)	Constant Growth DCF (8)
					Value Line (4)	Zacks (5)	Thomson (6)		
1	ALLETE	\$42.10	\$1.80	4.28%	2.50%	5.00%	6.00%	4.50%	8.8%
2	Alliant Energy	\$34.06	\$1.53	4.49%	6.00%	6.10%	5.40%	5.83%	10.3%
3	Ameren	\$41.94	\$2.54	6.06%	3.50%	5.00%	4.00%	4.17%	10.2%
4	American Elec. Power	\$40.08	\$1.80	4.49%	7.50%	6.30%	5.97%	6.59%	11.1%
5	Avista Corp.	\$21.85	\$0.78	3.57%	9.00%	5.00%	4.50%	6.17%	9.7%
6	Central Vermont P.S.	\$21.25	\$0.92	4.33%	7.50%	N/A	8.90%	8.20%	12.5%
7	Cleco Corp.	\$24.56	\$0.90	3.66%	10.50%	14.00%	12.04%	12.18%	15.8%
8	Consol. Edison	\$39.55	\$2.36	5.97%	1.00%	3.20%	3.00%	2.40%	8.4%
9	DTE Energy	\$42.34	\$2.12	5.01%	5.00%	6.30%	6.00%	5.77%	10.8%
10	Edison Int'l	\$49.22	\$1.34	2.72%	5.00%	8.80%	8.45%	7.42%	10.1%
11	Empire District	\$20.02	\$1.28	6.39%	10.00%	N/A	6.00%	8.00%	14.4%
12	Entergy Corp.	\$112.15	\$3.60	3.21%	10.00%	12.00%	12.18%	11.39%	14.6%
13	FPL Group	\$64.10	\$1.92	3.00%	9.50%	10.30%	9.84%	9.88%	12.9%
14	FirstEnergy	\$76.04	\$2.45	3.22%	11.00%	8.30%	8.33%	9.21%	12.4%
15	Hawaiian Electric	\$25.21	\$1.24	4.92%	7.50%	4.20%	12.20%	7.97%	12.9%
16	IDACORP Inc.	\$29.73	\$1.20	4.04%	2.00%	6.00%	6.00%	4.67%	8.7%
17	NiSource, Inc.	\$17.28	\$0.92	5.32%	5.00%	3.00%	2.91%	3.64%	9.0%
18	Northeast Utilities	\$25.92	\$0.88	3.40%	11.50%	10.00%	8.22%	9.91%	13.3%
19	NSTAR	\$33.23	\$1.53	4.60%	7.50%	6.40%	6.00%	6.63%	11.2%
20	PG&E Corp.	\$39.10	\$1.68	4.30%	5.00%	7.80%	7.24%	6.68%	11.0%
21	Pinnacle West	\$32.83	\$2.12	6.46%	2.00%	6.70%	4.00%	4.23%	10.7%
22	Portland General	\$23.69	\$1.01	4.26%	7.00%	7.00%	6.65%	6.88%	11.1%
23	Progress Energy	\$42.33	\$2.49	5.88%	5.00%	4.70%	6.12%	5.27%	11.2%
24	Southern Co.	\$35.74	\$1.73	4.84%	5.50%	4.70%	5.36%	5.19%	10.0%
25	Teco Energy, Inc.	\$19.59	\$0.82	4.19%	7.00%	10.10%	6.85%	7.98%	12.2%
26	UIL Holdings	\$31.20	\$1.73	5.54%	4.50%	6.00%	8.00%	6.17%	11.7%
27	Vectren Corp.	\$29.58	\$1.35	4.56%	3.50%	6.10%	5.77%	5.12%	9.7%
28	Westar Energy	\$22.13	\$1.20	5.42%	1.50%	4.80%	4.61%	3.64%	9.1%
29	Wisconsin Energy	\$45.53	\$1.24	2.72%	8.00%	9.60%	9.19%	8.93%	11.7%
30	Xcel Energy Inc.	\$20.29	\$0.97	4.78%	7.50%	5.40%	6.12%	6.34%	11.1%
31	<b>Average</b>	<b>\$36.75</b>	<b>\$1.58</b>	<b>4.52%</b>	<b>6.27%</b>	<b>6.89%</b>	<b>6.86%</b>	<b>6.70%</b>	<b>11.2%</b>
32	<b>Median</b>			<b>5.01%</b>				<b>5.77%</b>	<b>11.1%</b>

Source:  
Schedule SCH-7, Page 2.

## Aquila Missouri

### Adjusted Hadaway Constant Growth DCF Model Long-Term GDP Growth

<u>Line</u>	<u>Company</u>	<u>Recent Stock Price (1)</u>	<u>Next Year's Dividend (2)</u>	<u>Dividend Yield (3)</u>	<u>GDP Growth* (4)</u>	<u>Long-Term Constant Growth DCF (5)</u>
1	ALLETE	\$42.10	\$1.80	4.28%	4.90%	9.2%
2	Alliant Energy	\$34.06	\$1.53	4.49%	4.90%	9.4%
3	Ameren	\$41.94	\$2.54	6.06%	4.90%	11.0%
4	American Elec. Power	\$40.08	\$1.80	4.49%	4.90%	9.4%
5	Avista Corp.	\$21.85	\$0.78	3.57%	4.90%	8.5%
6	Central Vermont P.S.	\$21.25	\$0.92	4.33%	4.90%	9.2%
7	Cleco Corp.	\$24.56	\$0.90	3.66%	4.90%	8.6%
8	Consol. Edison	\$39.55	\$2.36	5.97%	4.90%	10.9%
9	DTE Energy	\$42.34	\$2.12	5.01%	4.90%	9.9%
10	Edison Int'l	\$49.22	\$1.34	2.72%	4.90%	7.6%
11	Empire District	\$20.02	\$1.28	6.39%	4.90%	11.3%
12	Energry Corp.	\$112.15	\$3.60	3.21%	4.90%	8.1%
13	FPL Group	\$64.10	\$1.92	3.00%	4.90%	7.9%
14	FirstEnergy	\$76.04	\$2.45	3.22%	4.90%	8.1%
15	Hawaiian Electric	\$25.21	\$1.24	4.92%	4.90%	9.8%
16	IDACORP Inc.	\$29.73	\$1.20	4.04%	4.90%	8.9%
17	NiSource, Inc.	\$17.28	\$0.92	5.32%	4.90%	10.2%
18	Northeast Utilities	\$25.92	\$0.88	3.40%	4.90%	8.3%
19	NSTAR	\$33.23	\$1.53	4.60%	4.90%	9.5%
20	PG&E Corp.	\$39.10	\$1.68	4.30%	4.90%	9.2%
21	Pinnacle West	\$32.83	\$2.12	6.46%	4.90%	11.4%
22	Portland General	\$23.69	\$1.01	4.26%	4.90%	9.2%
23	Progress Energy	\$42.33	\$2.49	5.88%	4.90%	10.8%
24	Southern Co.	\$35.74	\$1.73	4.84%	4.90%	9.7%
25	Teco Energy, Inc.	\$19.59	\$0.82	4.19%	4.90%	9.1%
26	UIL Holdings	\$31.20	\$1.73	5.54%	4.90%	10.4%
27	Vectren Corp.	\$29.58	\$1.35	4.56%	4.90%	9.5%
28	Westar Energy	\$22.13	\$1.20	5.42%	4.90%	10.3%
29	Wisconsin Energy	\$45.53	\$1.24	2.72%	4.90%	7.6%
30	Xcel Energy Inc.	\$20.29	\$0.97	4.78%	4.90%	9.7%
31	<b>Average</b>	<b>\$36.75</b>	<b>\$1.58</b>	<b>4.52%</b>	<b>4.90%</b>	<b>9.4%</b>
32	<b>Median</b>					<b>9.4%</b>

Sources:  
Schedule SCH-7, Page 3.  
\* Blue Chip Economic Indicators, October 10, 2008.

# Aquila Missouri

## Adjusted Hadaway Low Near-Term Growth Two-Stage Growth DCF Model

Line	Company	Recent Stock Price (1)	2009 Forecasted Dividend (2)	2012 Forecasted Dividend (3)	Annual Change to 2012 (4)	Cash Flows					GDP Growth* (10)	Two-Stage Growth DCF (11)
						2009 Dividend (5)	2010 Dividend (6)	2011 Dividend (7)	2012 Dividend (8)	2013 Dividend (9)		
1	ALLETE	\$42.10	\$1.80	\$2.00	\$0.07	\$1.80	\$1.87	\$1.93	\$2.00	\$2.10	4.90%	9.0%
2	Alliant Energy	\$34.06	\$1.53	\$1.92	\$0.13	\$1.53	\$1.66	\$1.79	\$1.92	\$2.01	4.90%	9.7%
3	Ameren	\$41.94	\$2.54	\$2.54	\$0.00	\$2.54	\$2.54	\$2.54	\$2.54	\$2.71	4.90%	10.2%
4	American Elec. Power	\$40.08	\$1.80	\$2.40	\$0.20	\$1.80	\$2.00	\$2.20	\$2.40	\$2.56	4.90%	10.0%
5	Avista Corp.	\$21.85	\$0.78	\$1.15	\$0.12	\$0.78	\$0.90	\$1.03	\$1.15	\$1.22	4.90%	9.4%
6	Central Vermont P.S.	\$21.25	\$0.92	\$0.92	\$0.00	\$0.92	\$0.92	\$0.92	\$0.92	\$0.98	4.90%	8.7%
7	Cleco Corp.	\$24.56	\$0.90	\$1.50	\$0.20	\$0.90	\$1.10	\$1.30	\$1.50	\$1.60	4.90%	10.0%
8	Consol. Edison	\$39.55	\$2.36	\$2.42	\$0.02	\$2.36	\$2.38	\$2.40	\$2.42	\$2.54	4.90%	10.3%
9	DTE Energy	\$42.34	\$2.12	\$2.30	\$0.06	\$2.12	\$2.18	\$2.24	\$2.30	\$2.41	4.90%	9.6%
10	Edison Int'l	\$49.22	\$1.34	\$1.64	\$0.10	\$1.34	\$1.44	\$1.54	\$1.64	\$1.72	4.90%	7.7%
11	Empire District	\$20.02	\$1.28	\$1.40	\$0.04	\$1.28	\$1.32	\$1.36	\$1.40	\$1.49	4.90%	11.0%
12	Entergy Corp.	\$112.15	\$3.60	\$4.80	\$0.40	\$3.60	\$4.00	\$4.40	\$4.80	\$5.04	4.90%	8.6%
13	FPL Group	\$64.10	\$1.92	\$2.34	\$0.14	\$1.92	\$2.06	\$2.20	\$2.34	\$2.45	4.90%	8.0%
14	FirstEnergy	\$76.04	\$2.45	\$3.05	\$0.20	\$2.45	\$2.65	\$2.85	\$3.05	\$3.25	4.90%	8.3%
15	Hawaiian Electric	\$25.21	\$1.24	\$1.30	\$0.02	\$1.24	\$1.26	\$1.28	\$1.30	\$1.38	4.90%	9.4%
16	IDACORP Inc.	\$29.73	\$1.20	\$1.20	\$0.00	\$1.20	\$1.20	\$1.20	\$1.20	\$1.26	4.90%	8.4%
17	NiSource, Inc.	\$17.28	\$0.92	\$1.00	\$0.03	\$0.92	\$0.95	\$0.97	\$1.00	\$1.07	4.90%	9.9%
18	Niortheast Utilities	\$25.92	\$0.88	\$1.03	\$0.05	\$0.88	\$0.93	\$0.98	\$1.03	\$1.10	4.90%	8.3%
19	NSTAR	\$33.23	\$1.53	\$1.85	\$0.11	\$1.53	\$1.64	\$1.74	\$1.85	\$1.97	4.90%	9.7%
20	PG&E Corp.	\$39.10	\$1.68	\$2.04	\$0.12	\$1.68	\$1.80	\$1.92	\$2.04	\$2.14	4.90%	9.4%
21	Pinnacle West	\$32.83	\$2.12	\$2.30	\$0.06	\$2.12	\$2.18	\$2.24	\$2.30	\$2.45	4.90%	11.0%
22	Portland General	\$23.69	\$1.01	\$1.20	\$0.06	\$1.01	\$1.07	\$1.14	\$1.20	\$1.28	4.90%	9.3%
23	Progress Energy	\$42.33	\$2.49	\$2.55	\$0.02	\$2.49	\$2.51	\$2.53	\$2.55	\$2.67	4.90%	10.2%
24	Southern Co.	\$35.74	\$1.73	\$2.00	\$0.09	\$1.73	\$1.82	\$1.91	\$2.00	\$2.10	4.90%	9.7%
25	Teco Energy, Inc.	\$19.59	\$0.82	\$0.90	\$0.03	\$0.82	\$0.85	\$0.87	\$0.90	\$0.96	4.90%	8.9%
26	UIL Holdings	\$31.20	\$1.73	\$1.73	\$0.00	\$1.73	\$1.73	\$1.73	\$1.73	\$1.84	4.90%	9.8%
27	Vectren Corp.	\$29.58	\$1.35	\$1.47	\$0.04	\$1.35	\$1.39	\$1.43	\$1.47	\$1.54	4.90%	9.2%
28	Westar Energy	\$22.13	\$1.20	\$1.32	\$0.04	\$1.20	\$1.24	\$1.28	\$1.32	\$1.41	4.90%	10.1%
29	Wisconsin Energy	\$45.53	\$1.24	\$1.60	\$0.12	\$1.24	\$1.36	\$1.48	\$1.60	\$1.68	4.90%	7.9%
30	Xcel Energy Inc.	\$20.29	\$0.97	\$1.06	\$0.03	\$0.97	\$1.00	\$1.03	\$1.06	\$1.11	4.90%	9.4%
31	<b>Average</b>	<b>\$36.75</b>	<b>\$1.58</b>	<b>\$1.83</b>	<b>\$0.08</b>	<b>\$1.58</b>	<b>\$1.66</b>	<b>\$1.75</b>	<b>\$1.83</b>	<b>\$1.93</b>	<b>4.90%</b>	<b>9.4%</b>
32	<b>Median</b>											<b>9.4%</b>

Sources:

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\* Blue Chip Economic Indicators, October 10, 2008.