Exhibit No.:
Issues: Cost of Capital
Witness: Samuel C. Hadaway
Sponsoring Party: Aquila Networks-L&P
Case No.: HR-2005-0450

Before the Public Service Commission
of the State of Missouri

Surrebuttal Testimony

of

Samuel C. Hadaway

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
SURREBUTTAL TESTIMONY OF SAMUAL C. HADAWAY
ON BEHALF OF AQUILA, INC.
D/B/A AQUILA NETWORKS-L&P
CASE NO. HR-2005-0450**

EXECUTIVE SUMMARY OF THE SURREBUTTAL TESTIMONY OF SAMUEL C. HADAWAY

In his surrebuttal testimony on behalf of Aquila, Inc., Dr. Hadaway responds to the rebuttal testimony of Staff witness David Murray. Dr. Hadaway explains and demonstrates in his Surrebuttal Schedule SCH-1 that Mr. Murray's ROE recommendations over the past five years have been consistently *below* the *lowest allowed rates of return* from any regulatory commission in the country. Similarly, in the two cases before this Commission that did not settle in which Mr. Murray testified, this Commission ultimately determined that the ROE should be 1.48 percent to 2.21 percent *higher* than Mr. Murray's midpoint recommendations.

Dr. Hadaway explains why Mr. Murray's recommendations have been extremely low. His low results stem from his singular reliance on the constant growth version of the DCF model with growth rates based entirely on analysts' near-term three-to-five-year estimates. Mr. Murray also fails to give any meaningful consideration to either consensus expectations for higher interest rates during the coming year or to the negative financial integrity impact that his recommendations would have. Dr. Hadaway concludes that Mr. Murray's criticisms of the Company's rate of return position are not justified and that many of Mr. Murray's remarks are incorrect.

Q. Please state your name and business address.

A. My name is Samuel C. Hadaway. My business address is FINANCO, Inc., 3520 Executive Center Drive, Austin, Texas 78731. I have previously filed direct and rebuttal testimony in this case before the Missouri Public Service Commission ("Commission") on behalf of Aquila, Inc. ("Aquila" or "Company").

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of Commission Staff witness David Murray. The other two intervenor witnesses (Mr. Gorman for the Federal Executive Agencies ("FEA") and Dr. Johnson for the Public Counsel) did not file rebuttal testimony.

Q. Please summarize your understanding of Mr. Murray's position.

A. By way of background, Mr. Murray’s return on common equity ("ROE") recommendation is by far the lowest of any of the other witnesses in the case. The midpoint of his 8.5 percent to 9.5 percent, 9.0 percent, recommendation is 80 basis points below the next lowest recommendation (Mr. Gorman for FEA, et al at 9.80%). Similarly, Mr. Murray’s midpoint is 95 basis points lower than Dr. Johnson's 9.95 percent recommendation on behalf of the Public Counsel. Recognizing this, he begins his rebuttal on page 2 by attempting to justify his low recommendation. In fact, he devotes a considerable portion of his rebuttal to this effort and in doing so includes incorrect comments about testimony of the other witnesses.

Q. How does Mr. Murray's ROE recommendation in this case compare to other ROE recommendations he has made in past cases before the Commission?

A. His current recommendation follows a trend. In each prior case Mr. Murray's proposals have been significantly below the mainstream of allowed ROEs. My Surrebuttal Schedule SCH-1 vividly illustrates this point as it demonstrates clearly that Mr. Murray's ROE recommendations in each case have fallen well below the range of ROEs allowed by state commissions around the country. In every case he has been below the lowest allowed return from any commission and generally 100 to 150 basis points below the national average. In the Missouri cases that were not settled, his recommendations were 148 basis points and 221 basis points below the equity returns that were ultimately granted by the Commission (Missouri Gas Energy: 10.50% less Murray midpoint at 9.02% = 1.48%; Empire District: 11.00% less Murray midpoint at 8.79% = 2.21%).

Q. What do these comparisons indicate?

A. Mr. Murray's ROE recommendations have been consistently outside the mainstream of allowed ROEs and obviously well below the cost of capital deemed appropriate by other reasonable people.

Q. Why are Mr. Murray's recommendations so low?

A. Mr. Murray's recommendations are low because he applies the discounted cash flow ("DCF") and capital asset pricing model ("CAPM") models in ways that cause low outcomes. He places singular reliance on the constant growth DCF model, using analysts' low near-term forecasts, which currently bear little relationship to investors' long-term expectations and requirements. I explained this feature of Mr. Murray's analysis in detail in my rebuttal testimony. Mr. Murray gives no meaningful consideration to overall economic growth or to other long-term growth rate forecasts. This approach in the DCF model is simply wrong. He also does not perform a meaningful market-based risk premium analysis to check the reasonableness of his DCF results or give any consideration to the financial integrity impacts of his recommendations.[1] Had Mr. Murray more realistically considered the models and data available to him, he should have recognized how far out of step he is. For example, my Surrebuttal Schedule SCH-2 shows that interest rate projections for the coming year have continued to increase, something Mr. Murray has apparently not considered. All these factors demonstrate why Mr. Murray's ROE proposals are so low, and why little or no weight should be given to his recommendations.

Q. At page 2 in his Executive Summary, Mr. Murray compares his constant growth DCF range to your initial results from the traditional constant growth model. Does Mr. Murray tell the Commission in that summary that you rejected those results because they failed to meet basic tests of reasonableness?

A. No. In a continuing proceeding such as this one, with multiple rounds of testimony, Mr. Murray's summary could easily be misunderstood. As I explained in my direct and rebuttal testimony, the traditional constant growth DCF model, as applied by Mr. Murray, simply does not meet basic checks of reasonableness. Under present market conditions with extremely low near-term growth rates from analysts and with interest rates expected to rise significantly, Mr. Murray's

[1] Mr. Murray offers a CAPM analysis that produces ranges of 6.18 percent to 9.41 percent (historical) and 6.31 percent to 7.45 percent (forward-looking). He appears to accept these results as confirmation of his DCF analysis.

constant growth results are below the reasonable range. Even the other intervenor witnesses, Mr. Gorman and Dr. Johnson, appear to recognize this fact.

Q. At page 6 of his rebuttal, Mr. Murray says that you dismissed your initial constant growth DCF results because of "historically low dividend yields and pessimistic analysts' growth forecasts." Is this an accurate characterization of your testimony?

A. No. Again, Mr. Murray's testimony, when viewed in isolation, could easily give an incorrect impression of my testimony. While I explained (at page 6 of my direct testimony) that low yields and pessimistic growth forecasts lead to low DCF results, in the sentence immediately prior to my statement that Mr. Murray quoted, I said: "results from the traditional constant growth DCF model fail to meet basic checks of reasonableness and, therefore, are not included in my recommended DCF range."

Q. At page 10 of his rebuttal, Mr. Murray says that you used "atypical variations of the DCF model to justify an *end-result oriented* cost of common equity recommendation of 11.50 percent." How do you respond to Mr. Murray's remark?

A. Mr. Murray is mistaken and at this point his testimony is simply incorrect.

Q. Please explain.

A. First, multi-stage growth DCF models and other alternative growth rate methods are widely used by regulatory commissions around the country. Contrary to Mr. Murray's statement, my approach to reviewing various model alternatives is not atypical. Second, Mr. Murray's remarks about my orientation and the Company's requested 11.5 percent ROE are inappropriate and wrong. As shown on page 44 of my direct testimony, my DCF models supported an ROE range of 10.6 percent to 11.1 percent and my risk premium analysis supported an ROE of 11.0 percent with other risk premium methods indicating 11.2 percent to 11.8 percent. From this analysis and my review of higher projected interest rates for the coming year, I recommended a base ROE of 11.0 percent for the reference company utility group. The Company’s requested 11.5 percent ROE is based on the further analysis of MPS/LP construction requirements and other risks, which clearly exceed the risks of the reference group.

Q. At page 11 of his rebuttal, Mr. Murray criticizes your risk premium analysis relative to "traditional finance" methods. How do you respond?

A. Mr. Murray says that "risk premium analysis in traditional finance would never use allowed returns on common equity as a variable." I disagree with this statement.

Q. Why?

A. The average allowed returns used in my risk premium analysis represent the annual consensus from state commissions about investors' requirements. I do not and would not advocate using the other commissions’ findings as a sole or independent source for estimating ROE. However, to ignore this information entirely as Mr. Murray has done, or to criticize it because it does not match ones personal beliefs is not reasonable.

Q. At pages 12 and 13 of his rebuttal, Mr. Murray cites four pieces of your testimony from the early 1980s and says that you relied entirely on a constant

growth DCF model and that your testimony now is inconsistent because it is offered on *behalf of utility companies* instead of for the Texas PUC. How do you respond?

A. Mr. Murray's remarks are again inappropriate and incorrect. To the best of my recollection, I have considered the constant growth version of the DCF model in each case, just as I did in the present case. I have also tested the DCF results against risk premium results and against current economic and market conditions. Based on this review, I offer my ROE recommendations in each case with consideration for the conditions and circumstances that exist at the time. At other times the various DCF models have produced more consistent results relative to each other and relative to risk premium models and economic conditions. In these cases I have routinely included the constant growth DCF version. This is the customary approach used by most professional economists and it is the appropriate way to exercise experienced judgment. For Mr. Murray to suggest otherwise is wrong.

Q. At page 19 of his rebuttal, Mr. Murray questions whether you "believe in" the efficient markets hypothesis ("EMH") and says that efficient markets are "a fundamental assumption of the [DCF] model." How do you respond?

A. Mr. Murray's statements are incorrect both with respect to my views on market efficiency and with respect to DCF model requirements. The DCF model was developed in the 1950s and earlier.[2] The EMH literature did not begin until into the 1960s.[3] While it is reasonable to expect investors to behave rationally and for the DCF model to incorporate investors' expectations, Mr. Murray is simply wrong about any strict connection between the DCF model and the EMH. Furthermore, my responses in my deposition were entirely consistent with current academic views about market efficiency, including those of Professor Eugene Fama, whose research originated the EHM.[4] Mr. Murray is wrong about current views on market efficiency and about DCF model requirements.

Q. Beginning at page 19 of his rebuttal, Mr. Murray offers a quotation from the Public Counsel's testimony in the most recent Empire District case (Case No. ER-2004-0570), which says that utility growth rates have been trending down and that prior 8 percent growth expectations should be replaced with 3-4 percent growth. He then for several pages criticizes your use of a 6.6 percent growth rate based on expected growth in nominal GDP. How do you respond?

A. As I explained in my rebuttal testimony, Mr. Murray (as well as the other intervenor witnesses) seems to have missed the point about what the growth rate in the DCF model is supposed to be. The growth rate in the DCF model is supposed to be the growth rate expected by investors into the very distant future

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[2] See for example, J.B. Williams, *The Theory of Investment Value*, Cambridge, Mass., Harvard University Press, 1938 and M. Gordon and E. Shapiro, "Capital Equipment Analysis: The Required Rate of Profit," *Management Science*, October 1956, pp. 102-110.

[3] See for example, Eugene F. Fama, "The Behavior of Stock Market Prices," *Journal of Business*, January 1965, pp. 34-105.

[4] See "As Two Economists Debate Markets, the Tide Shifts," *The Wall Street Journal online*, October 18, 2004.

(technically to infinity). In this context it does not really matter what the Public Counsel or Mr. Murray or even what Wall Street analysts think about growth for the next 3 to 5 years. In the present low inflation environment, it is not unexpected that near-term growth rates are low and only about equal to the long-term inflation rate. This does not mean that investors believe that low inflation and low growth will prevail forever. Other versions of the DCF model have been developed by professional economists to deal with this fluctuating growth rate problem. In fact, the effect of low near-term growth is what my two-stage DCF model is intended to incorporate. However, it is not correct or appropriate to extend such low near-term growth rates far out into the future as Mr. Murray has. His continued focus on such items as the Public Counsel quotation in his efforts to support unreasonably low DCF results is a clear reflection of his misunderstanding or his basic disregard for the underlying theory of the DCF model. Such an approach is incorrect and cannot produce a reasonable estimate of the cost of equity capital.

Q. At pages 23-26 of Mr. Murray's rebuttal testimony, there is a discussion of market-to-book adjustments and an argument that current DCF results should be adjusted downward to account for current market-to-book ratios greater than one. Did Mr. Murray propose such an adjustment in his initial direct testimony?

A. No.

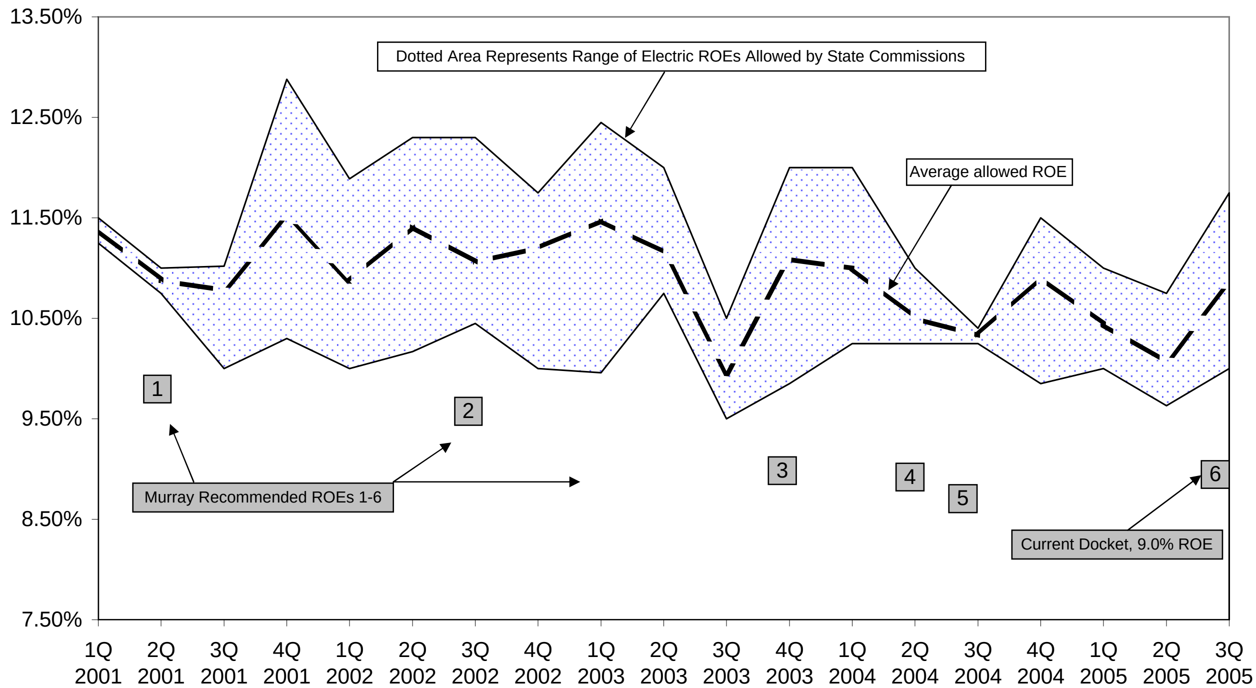
Q. Is such an approach consistent with financial theory or practice?

A. No. I have never seen in any finance textbook or any practical application of the DCF model a downward adjustment to account for market-to-book ratios greater than one. When market-to-book ratios are less than one, upward adjustments are sometimes necessary to avoid dilution. Such adjustments are not penalties to utility customers or rewards for shareholders. They are simply a reflection of the costs incurred when utilities are required to raise equity under unfavorable market conditions. Under more favorable conditions, or when merger and acquisitions or other industry factors push up market-to-book ratios, utilities can raise needed equity capital without dilution. Utility customers clearly are not harmed by these higher market-to-book ratios and, in fact, customers benefit from the lower dividend yields in the DCF model. Any further downward adjustment to the estimated ROE, in an effort to take back some of the shareholders' return as Mr. Murray's testimony suggests, would be wrong.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

Murray Electric & Gas Recommended ROEs vs. Allowed Electric ROEs



Murray Recommended ROEs (midpoint of range)	ROE Recommended	ROE Awarded
1: Docket GR-2001-292, Missouri Gas Energy, prepared April 2001	9.85%	n/a (stipulation)
2: Docket ER-2002-424, Empire District Electric Company, prepared August, 2002	9.66%	n/a (stipulation)
3: Docket ER-2004-0034, Aquila Networks, prepared December, 2003	9.14%	n/a (stipulation)
4: Docket GR-2004-0209, Missouri Gas Energy, prepared April, 2004	9.02%	10.50%
5: Docket ER-2004-0570, Empire District Electric Company, prepared September, 2004	8.79%	11.00%
6: Docket ER-2005-0436, Aquila Networks, prepared October, 2005	9.00%	n/a (pending)

Source of Allowed ROEs:
Regulatory Research Associates
Major Rate Case Decisions--January 2005-September 2005 (October 4,2005);
Major Rate Case Decisions--January 2003-December 2004 (January 14, 2005);
Major Rate Case Decisions--January 2001-December 2002 (January 22, 2003).

Note:
Case 1: 1st-2nd quarter 2001 allowed electric ROE range = 10.75% to 11.50%; gas company range = 10.75% to 11.50%
Case 4: 1st-2nd quarter 2004 allowed electric ROE range = 10.25% to 12.00%; gas company range = 10.00% to 12.00%

Surrebuttal Schedule SCH-2

Economic Indicators

Seasonally Adjusted Annual Rates — Dollar Figures in Billions

			Annual % Change				2005				E2006			
2004	E2005	E2006	2004	E2005	E2006		1Q	2Q	A3Q	E4Q	1Q	2Q	3Q	4Q
						Gross Domestic Product								
$11,734.3	$12,485.4	$13,233.3	7.0	6.4	6.0	GDP (current dollars)	$12,198.8	$12,378.0	$12,589.6	$12,775.4	$12,988.6	$13,162.9	$13,313.1	$13,468.7
7.0	6.4	6.0	-	-	-	Annual rate of increase (%)	7.0	6.0	7.0	6.0	6.8	5.5	4.6	4.8
4.2	3.6	3.3	-	-	-	Annual rate of increase–real GDP (%)	3.8	3.3	3.8	3.0	3.6	3.3	3.0	2.9
2.6	2.8	2.6	-	-	-	Annual rate of increase–GDP deflator (%)	3.1	2.6	3.1	2.8	3.1	2.1	1.6	1.8
						***Components of Real GDP**								
$7,588.6	$7,850.8	$8,076.4	3.9	3.5	2.9	Personal consumption expenditures	$7,764.9	$7,829.5	$7,904.7	$7,904.2	$7,962.1	$8,037.2	$8,115.5	$8,190.8
3.9	3.5	2.9	-	-	-	% change	3.5	3.4	3.9	(0.0)	3.0	3.8	4.0	3.8
1,089.9	1,139.3	1,148.5	6.0	4.5	0.8	Durable goods	1,122.3	1,143.9	1,173.5	1,117.3	1,117.2	1,135.5	1,158.8	1,182.5
2,200.4	2,291.4	2,369.7	4.7	4.1	3.4	Nondurable goods	2,265.6	2,285.9	2,300.6	2,313.6	2,337.8	2,360.3	2,380.9	2,399.7
4,310.9	4,436.1	4,569.7	3.0	2.9	3.0	Services	4,392.0	4,417.6	4,452.5	4,482.5	4,514.8	4,551.1	4,588.5	4,624.5
1,186.7	1,288.4	1,423.2	9.4	8.6	10.5	Nonresidental fixed investment	1,252.2	1,279.0	1,298.4	1,324.2	1,374.9	1,417.4	1,443.4	1,457.1
9.4	8.6	10.5	-	-	-	% change	5.7	8.8	6.2	8.2	16.2	12.9	7.5	3.8
947.6	1,051.0	1,149.7	11.9	10.9	9.4	Producers durable equipment	1,014.2	1,040.9	1,063.3	1,085.8	1,114.3	1,138.7	1,162.2	1,183.5
552.9	591.6	569.2	10.3	7.0	(3.8)	Residental fixed investment	574.8	590.0	597.0	604.7	596.3	577.9	557.8	545.0
10.3	7.0	(3.8)	-	-	-	% change	9.6	11.0	4.8	5.3	(5.4)	(11.8)	(13.2)	(8.8)
52.0	17.6	27.5	-	-	-	Net change in business inventories	58.2	(1.7)	(16.6)	30.7	32.4	27.1	24.7	25.9
1,952.3	1,994.3	2,041.1	2.2	2.2	2.3	Gov't purchases of goods & services	1,971.9	1,984.1	1,999.9	2,021.2	2,028.4	2,035.8	2,045.1	2,054.9
723.7	744.8	766.2	5.2	2.9	2.9	Federal	731.8	736.1	749.9	761.4	764.2	766.2	766.7	767.8
1,228.4	1,249.3	1,274.7	0.4	1.7	2.0	State & local	1,239.8	1,247.8	1,249.8	1,259.6	1,264.1	1,269.4	1,278.3	1,286.9
(601.3)	(625.8)	(635.4)	-	-	-	Net exports	(645.4)	(614.2)	(611.8)	(631.9)	(634.2)	(634.9)	(636.0)	(636.3)
1,117.9	1,194.3	1,268.8	8.4	6.8	6.2	Exports	1,165.3	1,195.4	1,197.6	1,218.9	1,239.4	1,258.2	1,277.0	1,300.7
1,719.2	1,820.1	1,904.2	10.7	5.9	4.6	Imports	1,810.7	1,809.6	1,809.4	1,850.8	1,873.6	1,893.2	1,913.0	1,937.0
						****Income & Profits**								
$9,713.3	$10,268.6	$10,927.6	5.9	5.7	6.4	Personal income	$10,073.4	$10,221.2	$10,293.0	$10,487.0	$10,679.5	$10,849.7	$11,015.4	$11,165.9
8,664.2	9,056.6	9,623.9	6.1	4.5	6.3	Disposable personal income	8,902.0	9,008.6	9,070.2	9,245.6	9,417.7	9,559.9	9,698.4	9,819.8
1.7	(0.1)	0.8	-	-	-	Savings rate (%)	0.5	0.1	(1.1)	0.1	0.7	0.8	0.9	0.7
1,059.4	1,424.7	1,499.1	13.0	34.5	5.2	Corporate profits before taxes	1,378.3	1,412.2	1,352.1	1,556.3	1,542.9	1,500.8	1,484.9	1,467.7
788.2	1,050.0	1,092.8	11.8	33.2	4.1	Corporate profits after taxes	1,015.7	1,039.7	998.3	1,146.3	1,127.0	1,093.0	1,081.6	1,069.6
58.55	69.16	77.92	20.2	18.1	12.7	‡Earnings per share (S&P 500)	60.32	63.36	66.31	69.16	72.83	74.99	77.28	77.92
						†Prices & Interest Rates								
2.7	3.4	2.5	-	-	-	Consumer price index	2.4	4.2	5.1	3.2	2.4	1.2	1.2	1.3
1.4	3.2	4.4	-	-	-	Treasury bills	2.5	2.9	3.4	3.9	4.3	4.4	4.4	4.4
4.3	4.3	5.2	-	-	-	10-yr notes	4.3	4.2	4.2	4.6	5.0	5.1	5.3	5.5
5.1	4.6	5.4	-	-	-	30-yr bonds	4.7	4.5	4.4	4.8	5.1	5.3	5.4	5.6
5.6	5.3	6.3	-	-	-	New issue rate–corporate bonds	5.3	5.1	5.1	5.6	6.0	6.2	6.4	6.6
						Other Key Indicators								
1,949.7	2,060.9	1,846.9	5.2	5.7	(10.4)	Housing starts (1,000 units SAAR)	2,083.0	2,044.3	2,069.3	2,046.7	1,956.9	1,833.6	1,804.9	1,792.2
16.9	16.8	16.3	1.3	(0.2)	(3.1)	Auto & truck sales (1,000,000 units)	16.5	17.2	17.9	15.7	15.9	16.2	16.5	16.6
5.5	5.1	4.9	-	-	-	Unemployment rate (%)	5.3	5.1	5.0	5.0	4.9	4.9	4.9	4.9
(8.2)	(2.0)	(2.5)	-	-	-	§U.S. dollar	(2.6)	11.6	5.6	3.2	(7.4)	(5.9)	(7.8)	(6.8)

Note: Annual changes are from prior year and quarterly changes are from prior quarter. Figures may not add to totals because of rounding. A–Advance data. P–Preliminary. E–Estimated. R–Revised. *1996 Chain-weighted dollars. **Current dollars. ‡Trailing 4 quarters. †Average for period. §Quarterly % changes at quarterly rates. This forecast prepared by Standard & Poor's.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

County of Jackson)
) ss
State of Missouri)

AFFIDAVIT OF SAMUEL C. HADAWAY

Samuel C. Hadaway, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Surrebuttal Testimony of Samuel C. Hadaway;" that said testimony was prepared by him and under his direction and supervision; that if inquiries were made as to the facts in said testimony and schedules, he would respond as therein set forth; and that the aforesaid testimony and schedules are true and correct to the best of his knowledge, information, and belief.

Samuel C. Hadaway
Samuel C. Hadaway

Subscribed and sworn to before me this 13th day of December 2005.

Terry D. Lutes
Notary Public
Terry D. Lutes

My Commission expires:
8-20-2008

Notary Public Notary Seal State of Missouri

TERRY D. LUTES
Jackson County
My Commission Expires
August 20, 2008