Exhibit No.:
Issue: *Natural Gas Prices*
Witness: *Charles R. Hyneman*
Sponsoring Party: *MoPSC Staff*
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Case No.: *ER-2007-0004*
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MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

REBUTTAL TESTIMONY

OF

CHARLES R. HYNEMAN

AQUILA, INC., d/b/a AQUILA NETWORKS-MPS - Electric
and AQUILA NETWORKS-L&P – Electric

CASE NO. ER-2007-0004

Jefferson City, Missouri
February 2007

****Denotes Highly Confidential Information****

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BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the matter of Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P, for authority to file tariffs increasing electric rates for the service provided to customers in the Aquila Networks-MPS and Aquila Networks-L&P service area.	)))))	Case No. ER-2007-0004

AFFIDAVIT OF CHARLES R. HYNEMAN

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

Charles R. Hyneman, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Rebuttal Testimony in question and answer form, consisting of 18 pages to be presented in the above case; that the answers in the foregoing Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

Charles R. Hyneman

Subscribed and sworn to before me this 6th day of February 2007.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

ASHLEY M. HARRISON
My Commission Expires
August 31, 2010
Cole County
Commission #06898978

Notary Public

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and AQUILA NETWORKS-L&P - Electric

CASE NO. ER-2007-0004

Q. Please state your name and business address.

A. Charles R. Hyneman, 615 East 13th Street, Kansas City, MO 64106.

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Public Service Commission (Commission) as a Utility Regulatory Auditor.

Q. Are you the same Charles R. Hyneman who filed direct testimony in this case?

A. Yes, I am.

EXECUTIVE SUMMARY

Q. Please summarize your rebuttal testimony.

A. The purpose of this rebuttal testimony is to address some of the statements made in the direct testimony of Aquila witness H. Davis Rooney on the issue of natural gas prices that Aquila has included in its fuel expense calculation in this case. In my rebuttal testimony I will explain why Aquila's use of New York Mercantile Exchange (Nymex) natural gas futures prices is a poor substitute for the actual natural gas prices that it incurred and why the use of Nymex futures natural gas prices is inappropriate for ratemaking purposes.

Q. What is the Nymex and what are Nymex futures?

A. The Nymex is the commodity exchange based in New York City where the natural gas futures and options and other energy futures are traded. The natural gas futures contract is a standardized contract for the purchase or sale of natural gas for future delivery. The standard contract for natural gas at Henry Hub is 10,000 MMBtu. Henry Hub is a pipeline interchange in Louisiana and it is the standard delivery point for the Nymex natural gas futures contract. Normally, the natural gas purchased or sold at Henry Hub through a Nymex futures contract is financial in nature and the transaction is unrelated to an electric utility's actual purchase of natural gas to fuel its generation plants. The Nymex futures contracts are used by utility companies to hedge against wide swings in natural gas prices.

Q. At page 7, of his direct testimony, Mr. Rooney states that the proper method for annualizing the test year fuel and purchased power expense is to normalize and annualize the price paid for fuel. Do you agree with this statement?

A. Yes. Unfortunately, while Mr. Rooney says that the proper way to annualize test year fuel expense is to normalize and annualize the price paid for fuel, his method for normalizing fuel expense is not at all consistent with this statement.

Q. Please explain.

A. The level of natural gas prices proposed by Mr. Rooney has nothing at all to do with the price Aquila paid for natural gas. Instead of using Aquila's actual cost of purchasing natural gas from its natural gas suppliers in the Midcontinent region of the U.S., Mr. Rooney uses, as a substitute for Aquila's actual costs, a 30 day average of the 2007 Nymex futures strip prices. There is no relationship between Nymex natural gas futures prices and the actual cash Aquila paid to purchase natural gas. This is a primary reason why the Staff believes Aquila's "market driven" methodology is not appropriate for setting rates in this case.

Q. What period did Mr. Rooney use to calculate an average Nymex futures price for 2007?

A. Mr. Rooney explains in his direct testimony that he used a three month average of the 2007 Nymex Strip for the period January through March 2006. The average of these prices as reflected on the Nymex column of Schedule HDR-4 of Mr. Rooney's direct testimony is $9.60.

Q. Has Aquila updated its Nymex futures-based natural gas price?

A. Yes. Aquila's update is based on an average of 2007 strip prices from October through December 2006. This average price, as shown below, is $7.98/MMBtu.

Q. What is a Nymex futures strip price?

A. A strip is simply an average of consecutive months' prices for a given time period. For example, a Nymex 12-month strip price quoted on a certain day would be based on the previous session's average closing price for twelve consecutive months of Nymex futures contracts.

Q. Does the Staff believe that using natural gas prices determined in a commodity futures market is a reasonable basis for setting electric utility rates in Missouri?

A. No.

Q. Please explain.

A. The Nymex futures market is simply a market created to transfer price risk. It was not designed to function as a predictor of future natural gas prices, nor does it serve that function.

While there may be rare exceptions, utility rates should be based on the utility's actual costs. This is especially so when recent, verifiable and measurable cost data is readily

available. In the rate setting process, costs are annualized to reflect updated costs and normalized to reflect an average of actual costs over a period of time. Utility rates in Missouri should not be set based on the results of a financial futures market whose purpose and function is totally unrelated to determining an appropriate natural gas price for Aquila's Missouri electric utilities.

Setting rates based on the results of a natural gas futures market violates basic commonly accepted ratemaking principles. Without strong and convincing evidence that this method is superior to the traditional method of setting rates, based on relevant actual historical costs, it should be rejected outright by this Commission.

Please refer to the rebuttal testimony of Staff witness Dr. Kwang Y. Choe for an additional discussion of the Staff's position on using Nymex futures to determine natural gas prices for ratemaking purposes.

Q. At page 10, line 13, of his direct testimony Mr. Rooney states that the natural gas prices he refers to in his testimony are the prices at the Henry Hub. Does Aquila purchase any of its natural gas for its Missouri operations at the Henry Hub in Louisiana?

A. No. Aquila does not purchase any natural gas from the Henry Hub, and this is one of the main reasons why the use of Nymex natural gas futures is a poor substitute for using actual historical natural gas prices as a basis for setting rates.

Aquila purchases its natural gas for its Missouri generation plants in the Midcontinent region of the United States. The Midcontinent region includes portions of Texas, Oklahoma and Kansas. The price of natural gas sourced from the Midcontinent region is significantly different from the price of natural gas at the Henry Hub.

Q. Is the price of natural gas at the Henry Hub higher or lower than the price of natural gas in the Midcontinent region?

A. The price of natural gas in the Midcontinent region is lower, sometimes significantly lower, than the price of natural gas at the Henry Hub. This difference in price is referred to as basis, or location basis. Because of the price difference, Aquila must make an adjustment to its average Nymex futures natural gas price to get the Nymex-based Henry Hub price on the same basis as the price of natural gas in the Midcontinent region.

Q. How does Aquila account for this difference?

A. Since the price of natural gas at the Henry Hub is higher than the Midcontinent region, Mr. Rooney adds a negative basis dollar amount to his average Nymex natural gas futures price to arrive at a commodity price to Aquila. In response to Data Request No. 110, Mr. Rooney explained how the basis dollar amount applied to the Nymex futures price is determined:

> The basis used in Aquila's fuel models is obtained from our gas buyers. They provide an estimated basis using their knowledge of current and historical markets, including review of published information, such as in Gas Daily, and quotes from market brokers.

The data below shows Aquila's updated Nymex futures prices, which are an average of the prices over the period October through December 2006. The average natural gas futures price over this period is $7.98, less an average basis of ($.78) for a net commodity price of $7.20 to Aquila. The monthly basis adjustments, which are also estimated costs not based on any actual event, range from $.34 /MMBtu to $1.27/MMBtu.

MONTH	Average Monthly Nymex 2007 Futures Strip Prices	Estimated Location Basis	Basis Adjusted Futures Price
Jan-07	**$8.00**	($0.34)	**$7.66**
Feb-07	**$8.02**	($0.48)	**$7.54**
Mar-07	**$7.93**	($0.66)	**$7.27**
Apr-07	**$7.58**	($0.77)	**$6.81**
May-07	**$7.58**	($0.77)	**$6.81**
Jun-07	**$7.67**	($0.77)	**$6.90**
Jul-07	**$7.76**	($0.77)	**$6.99**
Aug-07	**$7.83**	($0.77)	**$7.06**
Sep-07	**$7.89**	($0.77)	**$7.12**
Oct-07	**$7.98**	($0.77)	**$7.21**
Nov-07	**$8.52**	($1.27)	**$7.25**
Dec-07	**$9.03**	($1.27)	**$7.76**
2007 Average	**$7.98**	($0.78)	$7.20

Q. Have there been wide swings in the basis amounts between the Henry Hub, where the Nymex natural gas futures are priced, and the Midcontinent region, where Aquila buys its natural gas?

A. Yes. The following data was provided by Aquila in response to Data Request No. 110. It shows the wide range in basis from month to month. In October 2005 the basis difference increased to $3.72/MMBtu as a result of the damage caused by Hurricanes Katrina and Rita.

Month/Yr	Southern Star Basis
Jan-05	($0.45)
Feb-05	($0.56)
Mar-05	($0.60)
Apr-05	($0.72)
May-05	($0.21)
Jun-05	($0.24)
Jul-05	($0.54)
Aug-05	($1.05)
Sep-05	($2.35)
Oct-05	($3.72)
Nov-05	($3.24)
Dec-05	($2.34)
Jan-06	($2.79)
Feb-06	($1.53)
Mar-06	($0.84)
Apr-06	($1.41)
May-06	($1.47)
Jun-06	($0.91)
Jul-06	($0.63)
Aug-06	($0.87)

Q. Included in Aquila's updated Nymex futures gas price, is there an example where the 90-day average prices used by Aquila were significantly different from the actual settlement price?

A. Yes. Included in Aquila's updated natural gas price is an $8.00/MMBtu 90-day average price for the January 2007 futures contract. This January 2007 futures contract expired on December 27, 2006, at an actual price at the Henry Hub of $5.84/MMBtu. This represents an additional $2.17/MMBtu that Aquila would charge Missouri ratepayers over the actual cost of natural gas simply because of the use of the Nymex futures market. This also represents a 27 percent error between Aquila's estimate of the January 2007 natural gas price and the actual natural gas price charged at the Henry Hub.

Q. Using Aquila's Nymex futures natural gas price methodology in its direct filing, what did Aquila estimate the price of natural gas to be in January 2007?

A. As shown on Schedule HDR-4, Cost of Gas, Aquila's futures market methodology predicted the price of natural gas in January 2007 to be $10.93/MMBtu at the Henry Hub. As described above, the actual natural gas price at the Henry Hub was $5.84/MMBtu. In its direct filing, Aquila overestimated the price of natural gas by $5.09/MMBtu, which is a prediction error of 47 percent.

Q. Was Aquila's estimate of natural gas prices in February 2007 more accurate?

A. Not much. In its direct filing, Aquila estimated the price of natural gas at the Henry Hub in February 2007 to be $10.93/MMBtu, the same as its January 2007 natural gas price prediction. The Nymex February 2007 futures contract expired on January 29, 2007 at $6.92/MMBtu. Aquila overestimated the price of natural gas by $4.01/MMBtu in its direct filing. In its updated filing, Aquila estimated the price of natural gas in February 2007 to be $8.02/MMBtu, resulting in an overstatement of $2.91/MMBtu.

Q. Have you done a separate analysis to determine if the Nymex futures market is a good predictor of the actual settled natural gas prices at the Henry Hub?

A. Yes. Schedule 1 attached to this testimony shows that Nymex is an extremely bad predictor of natural gas prices even over a period as short as one year. An analysis of the price of a Nymex futures contract on its first trading day compared to what that contract's actual settlement price was (an indication of the market price of gas at the Henry Hub on that date) also shows that Nymex futures contracts are not a good predictor of natural gas prices.

The first line of Schedule 1 shows that on January 2002 one could have bought a January 2003 contract for $3.23/MMBtu. If Nymex was a good predictor of natural gas prices, one would expect this contract to settle somewhere around $3.23/MMBtu at its expiration date in one year. However, this contract closed at $4.99/MMBtu – nowhere near

the "predicted" price. Looking at the example in March 2002 one could have purchased a March 2003 contract for $3.17/MMBtu. One year later this contract was priced at $9.13/MMBtu for an increase of 188 percent.

Q. Have you also done a review of more recent months or Nymex futures natural gas prices compared to the contract's actual closing price?

A. Yes. I reviewed the futures contract expiration day prices for certain months in 2006 and compared this price with the contract's price at various different dates prior to closing. My findings below support a conclusion that Nymex does not accurately predict future natural gas prices:

> The futures contract for the March 2006 delivery closed on February 24, 2006, at $7.11/MMBtu. The price of this contract just three weeks earlier was $8.61/MMBtu.
>
> The April 2006 contract closed on March 29, 2006 at $7.23/MMBtu. On January 31, 2006, the price of this contract was $9.44/MMBtu.
>
> The June 2006 contract closed at $5.93/MMBtu on May 26, 2006. On April 19, 2006, the price of this contract was $8.41/MMBtu.
>
> The October 2006 contract closed on September 27, 2006 at $4.20/MMBtu. On August 25, 2006, the price of this contract was $7.34/MMBtu.
>
> The November 2006 contract closed on October 27, 2006 at $7.15. On August 25, 2006, the price of this contact was $9.35. This contract dropped to $5.66 on October 13, 2006, before increasing to its closing price.

Q. In describing Nymex natural gas futures prices on page 11 of his direct testimony, Mr. Rooney states that "these prices are known and represent average prices for actual market transaction for natural gas." Does the Staff agree with Aquila that a Nymex natural gas futures price is a result of a market transaction for natural gas?

A. No. Mr. Rooney's statement can be misleading. Most of the transactions in the Nymex futures market are not for the acquisition of natural gas. They are simply financial transactions made by either companies that want to hedge their exposure to natural gas price swings, or market speculators who seek to make a financial profit by speculating on the swings in the price of natural gas. According to information that the Nymex includes in its website, Nymex.com, less than 1% of the commodities traded are actually bought or sold through the Exchange.

Q. Do prices in the Nymex futures natural gas market represent actual known and measurable costs of the type that are used in utility rate setting?

A. No. Aquila's use of Nymex natural gas futures prices as a substitute for actual historical natural gas costs fails the known and measurable standard of utility ratemaking.

Q. What is "known and measurable" as that term is used in the rate setting process?

A. As it applies to an expense of providing utility service, the known and measurable standard of ratemaking means that the event that causes the incurrence of a cost is certain to occur and the incurred cost can be measured with a high degree of accuracy. Using a Nymex futures price for natural gas as a basis for setting rates fails both parts of the known and measurable standard.

Q. Please elaborate on why Nymex futures prices cannot meet the known and measurable ratemaking standard.

A. Nymex futures prices are neither known nor measurable because they don't result from actual natural gas purchases made by Aquila. It is a known event that Aquila will purchase natural gas from the Midcontinent region of the U.S. to supply fuel to its electric

generators. It is also a known event that Aquila will not purchase any natural gas from the Henry Hub, the region where the Nymex natural gas prices are determined. Therefore, the event that causes a cost to be incurred - the actual purchase of natural gas from Aquila's natural gas suppliers - will not occur under Aquila's proposed methodology.

Nymex futures natural gas prices are not measurable to any extent as they fluctuate, sometimes wildly, on a daily basis. This was demonstrated above in the examples of how badly Aquila's methodology predicted natural gas prices in January and February 2007.

In addition, the prices of Nymex futures contracts are associated with the Henry Hub market region, which differs significantly from the market region (Midcontinent region) where Aquila buys its natural gas. Aquila has to estimate basis adjustments to apply to the Nymex futures price to arrive at an estimate of what Aquila's actual natural gas costs will be.

Q. Please explain the reasons why the Nymex futures market is such a poor predictor of natural gas prices?

A. There are several reasons. First, the Nymex futures market is a commodity trading market, much like the stock market. It is subject to pricing signals that cause the market to react irrationally at times. Some of the events that cause the Nymex futures market to react in unpredictable ways are weather-related events, such as the anticipation of a hurricane, expectations that there will be a severe winter and reaction to world events such as terrorist attacks

In much the same way that the stock markets move up or down in reaction to world events, the Nymex futures market reacts similarly. While the market may eventually correct itself, the irrational market behavior, as reflected in market prices, becomes embedded in daily historical prices of the kind that Aquila uses to develop its natural gas price inputs to its

fuel model. The occurrence of even one or two events that causes significant swings in natural gas futures prices, although temporarily reflected in the market, will potentially have a significant effect on a natural gas price derived from the futures market during this period.

Q. Have there been unusual events that caused the NYMEX futures market to react irrationally?

A. Yes. On November 24, 2004, the Energy Information Administration (EIA), a branch of the Department of Energy, issued its Weekly Gas Storage Report. This report showed a much greater withdrawal of natural gas than was expected and the price of the near month natural gas futures contract on the Nymex increased $1.18/MMBtu on that day. It was found that a company had submitted faulty storage report numbers to the EIA through a clerical error. When the EIA issued its subsequent report which corrected that error, Nymex futures prices fell in response.

Q. Does Aquila recognize this irrational behavior of the Nymex futures market?

A. It did at one time. At page 7, of Aquila witness John Browning's direct testimony in Case No. ER-2004-0034 he stated:

> The NYMEX responds irrationally to short-term events such as storage reports, hurricanes and short-term weather patterns. The near months are actually the most volatile with the out months being more stable but less meaningful because of a lack of trading volume.

Certainly, the major price swings between Aquila's predicted January and February 2007 Nymex future prices and the resulting actual price demonstrate what Mr. Browning was concerned about when he presented his testimony on natural gas pricing in Case No. ER-2004-0034.

Q. What are additional reasons why the Nymex should not be relied upon as a predictor of natural gas prices for ratemaking purposes?

A. In addition to irrational behavior, natural gas futures prices are subject to manipulation. In the past few years, over 30 energy companies, including Aquila, have been charged with attempting to manipulate natural gas pricing markets including Nymex. As reported in its internet website, the Commodities Futures Trading Commission has charged over $300 million in fines to these energy and utility companies. Also, it was recently announced that the U.S. Congress will be investigating potential price manipulation of the Nymex natural gas futures market.

Q. How was Aquila involved in the Nymex market manipulation?

A. In its Form 10-Q for the quarterly period ended September 30, 2006, page 25, Aquila reported that on August 18, 2003, Cornerstone Propane Partners filed a suit in the Southern District of New York against 35 companies, including Aquila, alleging that the companies manipulated natural gas prices and futures prices on the Nymex through misreporting of natural gas trade data in the physical market. In the third quarter of 2006, Aquila agreed to pay $6.59 million to settle the case.

Also, as part of a January 28, 2004 agreement with the Commodity Futures Trading Commission (CFTC), Aquila paid $26.5 million in civil fines following a CFTC finding stating Aquila had delivered false reports to the reporting firms that publish price indexes. Aquila proposed a settlement to this case and did not admit that it engaged in these activities.

Q. At page 13 of his direct testimony, Mr. Rooney states that it is appropriate to use the current Nymex futures contract prices for normalizing the fuel costs in this case because Aquila's hedging policy includes the purchase of futures contracts. Do you agree with this statement?

A. No. Nymex futures gas prices are poor predictors of actual gas costs. The fact that Aquila purchases futures contracts under its hedging policy does not make the Nymex any better at predicting natural gas costs. In addition, the Staff believes that there are serious problems with Aquila's hedging strategy.

Q. Please explain the Staff's concern with Aquila's hedging strategy?

A. In my direct testimony in Case No. ER-2005-0436, I described the Staff's concern that Aquila may be going too far in its systematic purchases of its financial hedges without giving appropriate consideration to current market conditions. Aquila's policy is to purchase a set number of futures contracts each month on a specific date, with little or no consideration of the current natural gas futures contract price. In effect, Aquila is not using the professional judgment of its natural gas buyers nor is it considering the professional judgment of experts in the industry in its decisions to purchase futures contracts each month. Aquila created a systematic, no judgment hedging policy and it is sticking with it no matter how significant the hedging losses it is incurring. The Staff believes this is a serious flaw in Aquila's hedging policy.

While the Staff expressed this concern to Aquila in testimony in the last rate case, Aquila has made no changes in its hedging policy. It continues to purchase futures contracts on a systematic basis with little regard to the price. The Staff has a concern that too much rigidity in the application of its systematic hedging policies may be causing Aquila's hedging policy to accumulate hedging losses in excess of what a reasonable hedging program would accumulate.

Q. Has Aquila delayed the purchase of any of its natural gas futures contracts in 2005?

A. No. Aquila witness Gary L. Gottsch states at page 6 of his direct testimony that Aquila did not deviate at all from its hedging strategy of a systematic purchase of natural gas futures contracts in 2005.

Q. What was Aquila's actual commodity cost of natural gas over the past three years?

A. Aquila's actual costs for the period 2004 through 2006, as reflected in Staff Data Request No. 113 are shown below:

2004	**	_____ **
2005	**	_____ **
2006	**	_____ **

Q. How does the Staff's proposed commodity price of natural gas compare to Aquila's actual incurred cost of natural gas over the past three years?

A. The Staff's proposed level of natural gas commodity prices in its direct filing was ** _____ **. This amount was a weighted average of Aquila's actual natural gas costs for the period January 2005 through September 2006. The Staff has updated its natural gas price by including the months of October, November and December 2006. The Staff's current proposed 24-month price is ** _____ **. The Staff's proposed natural gas price is higher than Aquila's actual cost of natural gas incurred in 2004 and 2006. Aquila's 2005 actual natural gas costs were significantly increased by the extraordinary damage in the Gulf region caused by Hurricanes Katrina and Rita in the last quarter of 2005.

Q. How does the Aquila's proposed $7.20/MMBtu commodity price of natural gas compare to Aquila's actual incurred cost of natural gas over the past three years?

A. As shown above, Aquila's proposed $7.20/MMBtu price is significantly higher than its actual costs it incurred in 2004 and 2006. The reason why this price is lower than Aquila's average cost of natural gas in 2005 is because of the significant rise in natural gas

prices beginning in the last week of August 2005 and continuing at least through the rest of 2005 as a result of Hurricanes Katrina and Rita. These hurricanes wreaked havoc on gas production and infrastructure in 2005 sending natural gas prices to unprecedented levels.

Q. Did Aquila recently do a complete reversal on its method of proposing natural gas prices in a rate case?

A. Yes. In its 2005 rate case, as in this case, Aquila proposed natural gas prices based on the 2006 Nymex futures strip. However, in its 2004 rate case, Case No. ER-2004-0034, Aquila took a completely different approach to developing natural gas prices for ratemaking purposes. In that case, Aquila felt that the best way available to forecast future natural gas prices was to do an analysis of all the basic components that influence the natural gas markets.

In its 2004 rate case, Aquila went into great detail to explain to the Commission how the use of Nymex futures prices is not appropriate for ratemaking purposes. Yet, just three years later, Aquila is now advising this Commission that Nymex natural gas futures prices is the best way to predict Aquila's actual natural gas prices.

Q. Please continue.

A. Aquila's witness on the issue of natural gas prices in the 2004 rate case was John Browning, who at the time held the office of Vice President, Resource Operations. The purpose of Mr. Browning's direct testimony in Case No. ER-2004-0034, as described at page 2, was to "present information to support Aquila's position in this case regarding the cost of natural gas and coal used for generation in Aquila's power plants."

Mr. Browning calculated the average of six industry analysts' natural gas price estimates that were made in March 2003. In this average he included the actual Nymex

settlements (used as a surrogate for actual market prices, not Nymex futures) for January and February 2003. No Nymex futures prices were included in Aquila's proposal.

Q. What was Aquila's position in the 2004 rate case with respect to using Nymex futures as a basis for predicting natural gas prices?

A. Aquila very clearly stated that Nymex futures prices should not be used as a basis for setting rates. The following quotes by Mr. Browning concerning the use of Nymex futures as a basis for setting rates were taken from his rebuttal testimony in the 2004 rate case:

> As I mentioned in my direct testimony, the use of NYMEX futures is questionable in both the near term as well as the long term for predicting future spot prices. The near term futures can be highly volatile and react to short-term events irrationally. On the other hand, futures for years such as 2005 and 2006 are illiquid and lightly traded making them potentially meaningless as far as predicting future physical prices. [rebuttal page 10]

> Kwang Y. Choe, a Regulatory Economist with the Commission, filed testimony in Case No. ER-2001-672 that concurs with my opinion. Mr. Choe describes in great detail why the correlation between NYMEX futures and future spot prices is very weak and not suitable for ratemaking. [rebuttal page 11]

> I completely agree that the most realistic and most up-to-date price information should be used for ratemaking. That would exclude the use of historical costs from 2001 or 2002 and the usage of NYMEX futures. [rebuttal page 13]

Q. Please summarize your comments on Mr. Rooney's direct testimony as it relates to natural gas prices.

A. Utility rates in Missouri have been based, to the greatest extent possible, on actual costs incurred by a utility. Aquila must be able to justify an increase in utility rates by showing that the increase is caused by actual increases in actual costs. It is unreasonable to use a futures market that bears no resemblance to Aquila's natural gas market to predict what prices will be when actual costs are available and should be used. This is especially true

when, as I have shown in this testimony, the futures market is such a bad predictor of future natural gas prices.

The Commission should seriously question any attempt to set utility rates in Missouri on any basis or methodology that does not consider the actual costs or prices paid as a basis for an expense in the provision of utility service. Given the absence of strong and convincing evidence that Aquila's futures marked-based natural gas prices are superior to the traditional method of setting rates based on relevant actual historical costs, Aquila's method should be rejected outright by this Commission.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

On first trading day of	Futures Contract	Settled at 1st Trading Day	Expired at	Difference	Difference %
Jan-02	Jan-03	$3.23	$4.99	$1.76	54%
Feb-02	Feb-03	$2.93	$5.66	$2.73	93%
Mar-02	Mar-03	$3.17	$9.13	$5.96	188%
Apr-02	Apr-03	$3.59	$5.15	$1.56	43%
May-02	May-03	$3.75	$5.12	$1.37	37%
Jun-02	Jun-03	$3.61	$5.95	$2.33	65%
Jul-02	Jul-03	$3.78	$5.29	$1.52	40%
Aug-02	Aug-03	$3.58	$4.69	$1.11	31%
Sep-02	Sep-03	$3.76	$4.93	$1.17	31%
Oct-02	Oct-03	$3.89	$4.43	$0.54	14%
Nov-02	Nov-03	$4.06	$4.46	$0.40	10%
Dec-02	Dec-03	$4.28	$4.86	$0.58	14%
Jan-03	Jan-04	$4.99	$6.15	$1.16	23%
Feb-03	Feb-04	$5.00	$5.78	$0.78	16%
Mar-03	Mar-04	$5.49	$5.15	($0.34)	-6%
Apr-03	Apr-04	$4.63	$5.37	$0.73	16%
May-03	May-04	$4.73	$5.94	$1.21	26%
Jun-03	Jun-04	$5.13	$6.68	$1.55	30%
Jul-03	Jul-04	$4.87	$6.14	$1.27	26%
Aug-03	Aug-04	$4.74	$6.05	$1.31	28%
Sep-03	Sep-04	$4.72	$5.08	$0.37	8%
Oct-03	Oct-04	$4.68	$5.72	$1.05	22%
Nov-03	Nov-04	$4.81	$7.63	$2.81	58%
Dec-03	Dec-04	$5.06	$7.98	$2.92	58%
Jan-04	Jan-05	$5.79	$6.21	$0.43	7%
Feb-04	Feb-05	$5.63	$6.29	$0.66	12%
Mar-04	Mar-05	$5.81	$6.30	$0.49	8%
Apr-04	Apr-05	$5.37	$7.32	$1.96	36%
May-04	May-05	$5.41	$6.75	$1.34	25%
Jun-04	Jun-05	$6.01	$6.12	$0.11	2%
Jul-04	Jul-05	$5.92	$6.98	$1.05	18%
Aug-04	Aug-05	$6.11	$7.65	$1.54	25%

Schedule 1