

REDACTED
Per Commission Directive
on February 26, 2004

Exhibit No.
Witness: Robert R. Stephens
Type of Exhibit: Direct Testimony
Sponsoring Party: Federal Executive Agencies, SIEUA and
St. Joseph Missouri Industrial Users
Subjects: Revenue Requirements: Natural Gas
Prices
Date: February 27, 2004

BEFORE THE
PUBLIC SERVICE COMMISSION OF MISSOURI

In the Matter of Aquila, Inc., d/b/a Aquila)
Networks - L&P and Aquila Networks – MPS,) Case No. ER-2004-0034
to Implement a General Rate Increase in)
Electricity)
)
)
)

Direct Testimony and Schedules of

Robert R. Stephens

On Behalf of

Federal Executive Agencies
Sedalia Industrial Energy Users Association
St. Joseph, Missouri Industrial Energy Users

February 27, 2004
Project 8051, 8052, 8053



BRUBAKER & ASSOCIATES, INC.
ST. LOUIS, MO 63141-2000

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PUBLIC SERVICE COMMISSION OF MISSOURI**

In the Matter of Aquila, Inc., d/b/a Aquila)
Networks - L&P and Aquila Networks - MPS)
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Affidavit of Robert R. Stephens

STATE OF MISSOURI)
) SS
COUNTY OF ST. LOUIS)

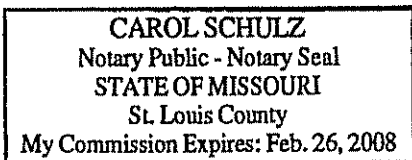
Robert R. Stephens, being first duly sworn, on his oath states:

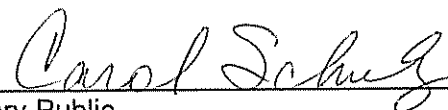
1. My name is Robert R. Stephens. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, MO 63141-2000. We have been retained by the Federal Executive Agencies, the Sedalia Industrial Energy Users Association, and the St. Joseph, Missouri Industrial Energy Users in this proceeding on their behalf.
2. Attached hereto and made a part hereof for all purposes is my direct testimony and schedules which were prepared in written form for introduction into evidence in the ER-2004-0034 Proceeding.
3. I hereby swear and affirm that my direct testimony and schedules are true and correct and show the matters and things they purport to show.



Robert R. Stephens

Subscribed and sworn before this 27th day of February, 2004.





Notary Public

My Commission expires on February 26, 2008.

**BEFORE THE
PUBLIC SERVICE COMMISSION OF MISSOURI**

In the Matter of Aquila, Inc., d/b/a Aquila)
Networks - L&P and Aquila Networks – MPS,)
to Implement a General Rate Increase in)
Electricity)

)
)
)

Case No. ER-2004-0034

Direct Testimony of Robert R. Stephens

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

2 A Robert R. Stephens; 1215 Fern Ridge Parkway, Suite 208, St. Louis, MO 63141-2000.

3 **Q WHAT IS YOUR OCCUPATION?**

4 A I am a consultant in the field of public utility regulation with the firm of Brubaker &
5 Associates, Inc., energy, economic and regulatory consultants.

6 **Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.**

7 A This information is included in Appendix A to my testimony.

8 **Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?**

9 A I am appearing on behalf of the Federal Executive Agencies, the Sedalia Industrial
10 Energy Users Association (SIEUA), and the St. Joseph, Missouri Industrial Energy
11 Users. Members of SIEUA participating in this proceeding take service from Aquila
12 Networks - MPS (MPS).

**Robert R. Stephens
Page 1**

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Agencies take electric service from MPS .

Q WHAT IS THE SUBJECT OF YOUR TESTIMONY?

A I will address the natural gas price assumptions used by Aquila¹ in the fuel and purchased power forecasts

The fact that I have not addressed other elements of MPS' revenue requirement claim should not be construed as an endorsement of Aquila's claims or positions. Moreover, the fact that I have not addressed a particular element or claim does not indicate that the parties that I am appearing on behalf of in this case have no interest in the issues. We expect that the Staff of the Missouri Public Service Commission and Public Counsel will address many of these issues. The parties on whose behalf I am appearing reserve their rights to respond to testimony of other parties on all issues, and to actively participate in hearings and any potential settlement with respect to any and all issues in this proceeding. Furthermore, the fact that any testimony at all is offered should not be construed as any limitation on the ability of these intervenors to pursue to its logical conclusion the results of the October 28, 2003 Decision of the Missouri Supreme Court in Ag Processing, Inc. v Public Service Commission, Supreme Court Docket No. SC 85352.

Q PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS.

A My findings and recommendations may be summarized as follows:

1. The commodity prices for natural gas that Aquila proposes to use to set rates are excessive. They were established at a time when gas prices were at abnormally

¹ As used in this testimony, "Aquila" refers to MPS .

1 high levels. They exceed the current expectations of future gas prices for the
2 period in which rates set in this case will apply by approximately \$0.43/MMBtu to
3 \$1.15/MMBtu, with a midpoint estimate of \$0.79/MMBtu.

4 2. The natural gas commodity prices which I recommend Aquila use in establishing
5 its revenue requirement are based on a combination of the current level of
6 NYMEX futures prices for calendar years 2004 through 2006 and the 2004
7 forecast from the Energy Information Administration. The recommended average
8 value for this period is \$4.35/MMBtu.

9 3. A precise indication of the system savings associated with the lower forecasted
10 gas prices would require Real-Time model dispatch runs incorporating the
11 requested natural gas commodity prices. SIEUA recently forwarded a data
12 request to Aquila requesting that it perform these runs and provide the results.

13 4. I have estimated the reduction in the claimed revenue requirement associated
14 with the forecasted natural gas prices at approximately \$7,219,000 for MPS
15 electric service
16 . These estimates are calculated
17 by scaling up Aquila's proposed Adjustment Nos. FPP-40, which estimate the
18 impact of a \$0.50 per Mcf² increase in natural gas prices over Aquila's original
19 natural gas price estimates.

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² Please note that gas prices are stated in both \$/MMBtu and \$ per Mcf in Aquila's testimony. Consequently, both terms are used in this testimony as well. One Mcf of natural gas contains approximately one MMBtu of energy.

1 **Natural Gas Price Forecast**

2 **Q HAVE YOU REVIEWED THE NATURAL GAS PRICE FORECAST WHICH AQUILA**
3 **PROPOSES TO USE TO ESTABLISH RATES IN THIS PROCEEDING?**

4 A Yes, I have. In its original filing, this issue is addressed by Company Witness John C.
5 Browning. Mr. Browning discusses at Pages 8 through 12 how he came up with his
6 recommended gas price forecast, which is based on a combination of actual NYMEX
7 settlement prices for January and February 2003 and an average of six analysts'
8 forecasts. The analysts' price forecasts are summarized by Mr. Browning and are from
9 the February and March 2003 time period.

10 Mr. Browning indicated in response to data request SIE-30 that the initial draft of
11 his testimony was completed in late March 2003 and that editing was completed in early
12 June 2003.

13 **Q DID AQUILA PROVIDE AN UPDATED NATURAL GAS PRICE FORECAST IN ITS**
14 **SEPTEMBER 30, 2003 REVENUE REQUIREMENT UPDATE?**

15 A No. According to Aquila's response to data request SIE-27, there has been no update.
16 Also, my review of the workpapers associated with the updated filing indicates that the
17 natural gas price assumptions used for modeling purposes remain the same as in the
18 original filing.

19 **Q HAVE NATURAL GAS MARKET CIRCUMSTANCES CHANGED SINCE THE TIME**
20 **MR. BROWNING PREPARED HIS TESTIMONY?**

21 A Yes, they have changed significantly. Schedule 1 is a graph showing the 2003 Henry
22 Hub monthly index prices as well as 2004 Henry Hub futures prices. As can be seen in

1 the 2003 line, monthly prices peaked dramatically in March 2003 (at over \$9/MMBtu),
2 the very time at which Mr. Browning prepared his testimony, and then dropped
3 dramatically over the remainder of the year. Schedule 1 also shows that, in contrast,
4 2004 futures prices are generally in the \$5 or below range for the year.

5 In addition, according to Mr. Browning's testimony at Pages 9-11, nearly every
6 analyst cited historically low storage levels coming out of last winter as a contributing
7 factor to their relatively high natural gas price forecasts. In actuality, natural gas storage
8 injections were very robust during this storage season, bringing levels of natural gas
9 storage to very high levels going into this winter period. Consequently, a number of the
10 analysts cited by Mr. Browning have since revised their forecasts downward to reflect
11 more current conditions.

12 Schedule 2 illustrates what these various analysts were forecasting for 2004
13 prices at the time Mr. Browning's testimony was prepared, as compared to more recently
14 published forecasts. Some of the analysts cited by Mr. Browning are not shown on
15 Schedule 2 because either a more current forecast was not publicly available, or the
16 comparable 2004 gas price forecast was not available. Most of these analysts have
17 significantly reduced their 2004 price forecast.

18 In addition to the various analysts' forecasts shown on Schedule 2, I have also
19 included information related to NYMEX futures contracts for 2004 from the period when
20 Mr. Browning's testimony was prepared and finalized, as well as forecasted 2004 natural
21 gas wellhead prices as reported by the Energy Information Administration (EIA), a
22 statistical agency of the U.S. Department of Energy, in its monthly EIA Short-Term
23 Energy Outlook.

24 The overall conclusion from reviewing Schedule 2 is that various analysts, both
25 private and governmental, as well as industry traders are now considering forecasted

1 2004 prices to be significantly lower than forecast in the time period when Aquila
2 developed its gas prices.

3 **Q WHAT SPECIFIC PRICES DID AQUILA USE IN PREPARING ITS RATE FILING?**

4 A Mr. Browning indicates at Page 12 of his testimony that a 12-month price of
5 \$5.14/MMBtu was used. (This price does not reflect MPS' proposed \$0.50 per Mcf
6 increment described by Company Witness Keith G. Stamm in conjunction with
7 Company's proposed gas commodity cost recovery mechanism.)

8 Mr. Browning does not provide a month-by-month breakdown of the natural gas
9 prices used by Aquila. However, as shown in Aquila workpapers, the average natural
10 gas costs used in the electric model are listed in Table 1 below.

<u>Months</u>	<u>Average Cost (\$/MMBtu)</u>
Jan	5.259
Feb	5.776
Mar	6.226
Apr	5.686
May	5.353
Jun	5.178
Jul	5.147
Aug	5.111
Sept	5.051
Oct	5.035
Nov	5.407
Dec	5.516
Average	5.336

1 **Q WHAT PERIOD OF NATURAL GAS PRICES DO YOU RECOMMEND BE USED FOR**
2 **ESTABLISHING RATES IN THIS CASE?**

3 A As Mr. Browning has discussed, 2002 prices may not be representative of gas costs
4 going forward. However, neither are the 2003 prices cited by Mr. Browning, which were
5 a combination of two months' historical prices and an average of analysts' projections for
6 other months in 2003. As I indicated, 2003 actual prices contain some very dramatic
7 and unexpected price swings and ought not to form the basis for rates going forward.

8 I recommend use of expected prices in the 2004 through 2006 time period. This
9 is the time period during which rates established in this case are likely to be in effect. In
10 addition, the use of a three-year average price smoothes out year-to-year anomalies in
11 prices. Also, this period corresponds to the cost recovery proposal of my colleague,
12 Maurice Brubaker.

13 I do not recommend use of the analyst sources cited by Mr. Browning as they
14 generally do not provide detailed forecasts of prices in the 2004 through 2006 time
15 period and the information has been made public only sporadically in recent months.

16 **Q ARE THERE ANY PUBLICLY AVAILABLE SOURCES OF INFORMATION RELATED**
17 **TO GAS PRICES IN THE 2004-2006 PERIOD?**

18 A Yes. NYMEX futures prices are established every trading day for the 2004 through 2006
19 period. Schedule 3 attached to this testimony shows NYMEX Henry Hub futures
20 contracts for the calendar months in 2004, 2005 and 2006. To smooth out day-to-day
21 pricing volatility, I have averaged closing prices over a recent 10-day period on the
22 schedule.

23 As you can see on Line 13 at Column 4 of Schedule 3, the average NYMEX price
24 over this period is \$4.71/MMBtu.

1 **Q ARE THERE ANY OTHER DATA SOURCES THAT THE COMMISSION SHOULD**
2 **CONSIDER IN ESTABLISHING THE PROPER GAS PRICE FORECAST?**

3 A Yes. The Energy Information Administration provides a report each month called the
4 "Short-Term Energy Outlook" which, among other things, provides a forecast of natural
5 gas wellhead prices. The most recent report at the time of my testimony preparation,
6 indicates an average projected 2004 price of \$3.99 per Mcf.³

7 Unfortunately, EIA does not provide 2005 and 2006 forecasts as part of this
8 monthly report. However, as suggested by the NYMEX futures prices shown on
9 Schedule 3, and indicated by other information we have obtained from EIA, it appears
10 that EIA projects 2005 and 2006 prices to be somewhat lower than 2004. Consequently,
11 use of the 2004 average price could be considered a conservatively high assumption for
12 the average of 2004, 2005 and 2006 EIA projected prices.

13 **Q WHAT PRICE SHOULD AQUILA USE IN ITS MODELING FOR REVENUE**
14 **REQUIREMENTS IN THIS CASE?**

15 A Based on the NYMEX futures contracts discussed above as well as the EIA forecasted
16 gas prices, it appears that natural gas prices in the 2004 through 2006 period should
17 average in the range of \$3.99 to \$4.71, with a midpoint of \$4.35/MMBtu. I recommend
18 that this midpoint price be used to establish rates in this case, based on the information
19 available at this time. This represents a \$0.79/MMBtu reduction from the \$5.14/MMBtu
20 figure cited by Mr. Browning.

³ A graph of EIA's forecasts of 2004 projected average price during 2003 is shown as Schedule 4. While the EIA forecast was higher earlier in the year, especially during the time when Mr. Browning's testimony was finalized, it has been relatively stable around the \$4.00 per Mcf level for the last several months.

1 **Q WHAT IS THE REVENUE REQUIREMENT IMPACT ASSOCIATED WITH A \$0.79**
2 **REDUCTION IN THE NATURAL GAS PRICE FORECAST?**

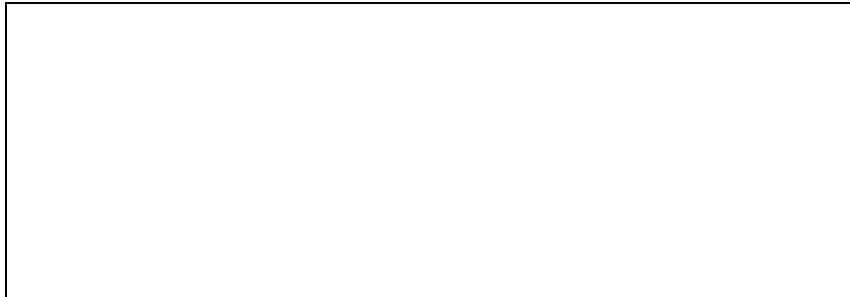
3 A I cannot state with certainty what the overall revenue requirement impact would be,
4 because this would require additional production cost model runs that only Aquila can
5 perform. SIEUA recently issued a data request to Aquila asking it to rerun its production
6 cost model assuming the recommended \$4.35/MMBtu natural gas price. However,
7 Aquila has not had time to perform this run and respond to the data request. I
8 recommend that Aquila provide this information in its rebuttal testimony in this case. In
9 the event Aquila fails to do so, I will seek to provide information from the response for
10 the record.

11 To illustrate the potential magnitude of this adjustment, I have utilized the
12 information provided by Aquila in its Adjustment No . FPP-40 , which provide the
13 revenue impacts associated with a \$0.50 per Mcf increase in natural gas costs
14 associated with its proposed gas commodity cost recovery mechanism, which is
15 described in the direct testimony of Aquila Witness Keith G. Stamm. Table 2, below,
16 shows the amount of the FPP-40 adjustments on the Aquila revenue
17 requirements as well as the estimated gas cost reductions, based on scaled up values to
18 reflect a \$0.79/MMBtu change.

Table 2		
Estimated Impact of Natural Gas Price Decrease		
<u>Utility</u>	<u>FPP-40 Adjustment (at \$.050 per Mcf)</u>	<u>Estimated Gas Cost Reduction (at \$.79/MMBtu)</u>
MPS – Electric	\$4,569,000	\$7,219,000

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16 **Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

17 **A** Yes, it does.

Qualifications of Robert R. Stephens

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

2 A Robert R. Stephens. My business mailing address is P. O. Box 412000, 1215 Fern
3 Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000.

4 **Q PLEASE STATE YOUR OCCUPATION.**

5 A I am a consultant in the field of public utility regulation with the firm of Brubaker &
6 Associates, Inc. (BAI), energy, economic and regulatory consultants.

7 **Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.**

8 A I graduated from Southern Illinois University at Carbondale in 1984 with a Bachelor of
9 Science degree in Engineering. During college, I was employed by Central Illinois Public
10 Service Company in the Gas Department. Upon graduation, I accepted a position as a
11 Mechanical Engineer at the Illinois Department of Energy and Natural Resources. In the
12 summer of 1986, I accepted a position as Energy Planner with City Water, Light and
13 Power, a municipal electric and water utility in Springfield, Illinois. My duties centered on
14 integrated resource planning and the design and administration of load management
15 programs.

16 From July 1989 to June 1994, I was employed as a Senior Economic Analyst in
17 the Planning and Operations Department of the Staff of the Illinois Commerce
18 Commission. In this position, I reviewed utility filings and prepared various reports and
19 testimony for use by the Commission. From June 1994 to August 1997, I worked
20 directly with a Commissioner as an Executive Assistant. In this role, I provided technical
21 and policy analyses on a broad spectrum of issues related to the electric, gas,

1 telecommunications and water utility industries.

2 In May 1996, I graduated from the University of Illinois at Springfield with a
3 Master of Business Administration degree.

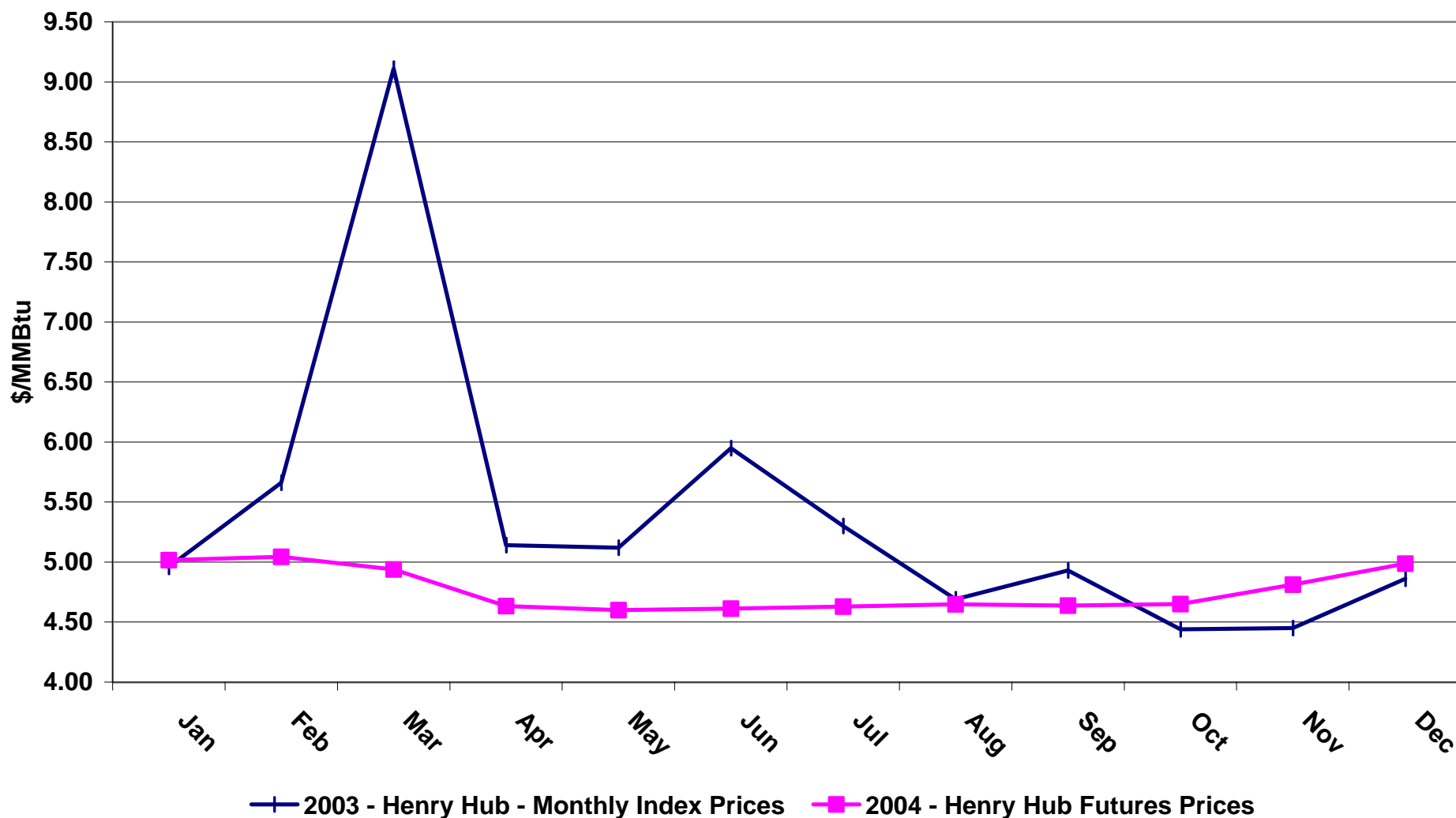
4 In August 1997, I joined Brubaker & Associates, Inc. as a Consultant. Since that
5 time, I have participated in the analysis of various utility rate and restructuring matters in
6 several states and the evaluation of power supply proposals for clients. I am currently
7 an Associate in the firm.

8 The firm of Brubaker & Associates, Inc. provides consulting services in the field
9 of energy procurement and public utility regulation to many clients, including large
10 industrial and institutional customers, some utilities, and on occasion, state regulatory
11 agencies. More specifically, we provide analysis of energy procurement options based
12 on consideration of prices and reliability as related to the needs of the client; prepare
13 rate, feasibility, economic and cost of service studies relating to energy and utility
14 services; prepare depreciation and feasibility studies relating to utility service; assist in
15 contract negotiations for utility services; and provide technical support to legislative
16 activities.

17 In addition to our main office in St. Louis, the firm also has branch offices in
18 Denver, Colorado; Chicago, Illinois; Asheville, North Carolina; Corpus Christi, Texas;
19 and Plano, Texas.

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COMPARISON OF HISTORICAL 2003 HENRY HUB MONTHLY INDEX PRICES TO RECENT 2004 HENRY HUB FUTURES PRICES



Sources: 2003 prices: Platts Monthly Gas Daily Prices Guide
 2004 prices: NYMEX.com "Daily Natural Gas Market Data" - Ten Day Average (11/13/03 - 11/26/03)

**Comparison of Expected 2004 Annual Natural Gas Prices by Various Sources
From the Time of Aquila Direct Testimony and More Recently**

(\$/MMBtu or \$/Mcf)

<u>Line</u>	<u>Information Source</u>	<u>Forecast "Then"</u> (1)	<u>Forecast "Now"</u> (2)
Sources Quoted by Mr. Browning:			
1	Cambridge Energy Research Associates	\$5.35	\$4.62
2		3/20/03	9/16/03
3	Energy and Environmental Analysis ¹	\$6.50	\$5.00
4		3/13/03	9/11/03
5	Jefferies & Co. ²	\$4.50	\$4.00-\$6.00
6		3/11/03	10/23/03
7	Fitch Ratings	\$3.50	\$4.00
8		3/5/03	Oct-03
9	Lehman Brothers	\$4.50	\$3.75
10		2/27/03	10/15/03
Other Industry Sources:			
11	Energy Information Administration	\$4.99	\$3.99
12		Jun-03	Nov-03
13	NYMEX Futures	\$5.44	\$4.77
14		Jun-03	11/13/03-11/26/03

¹ Quoted but not used in Browning estimate.

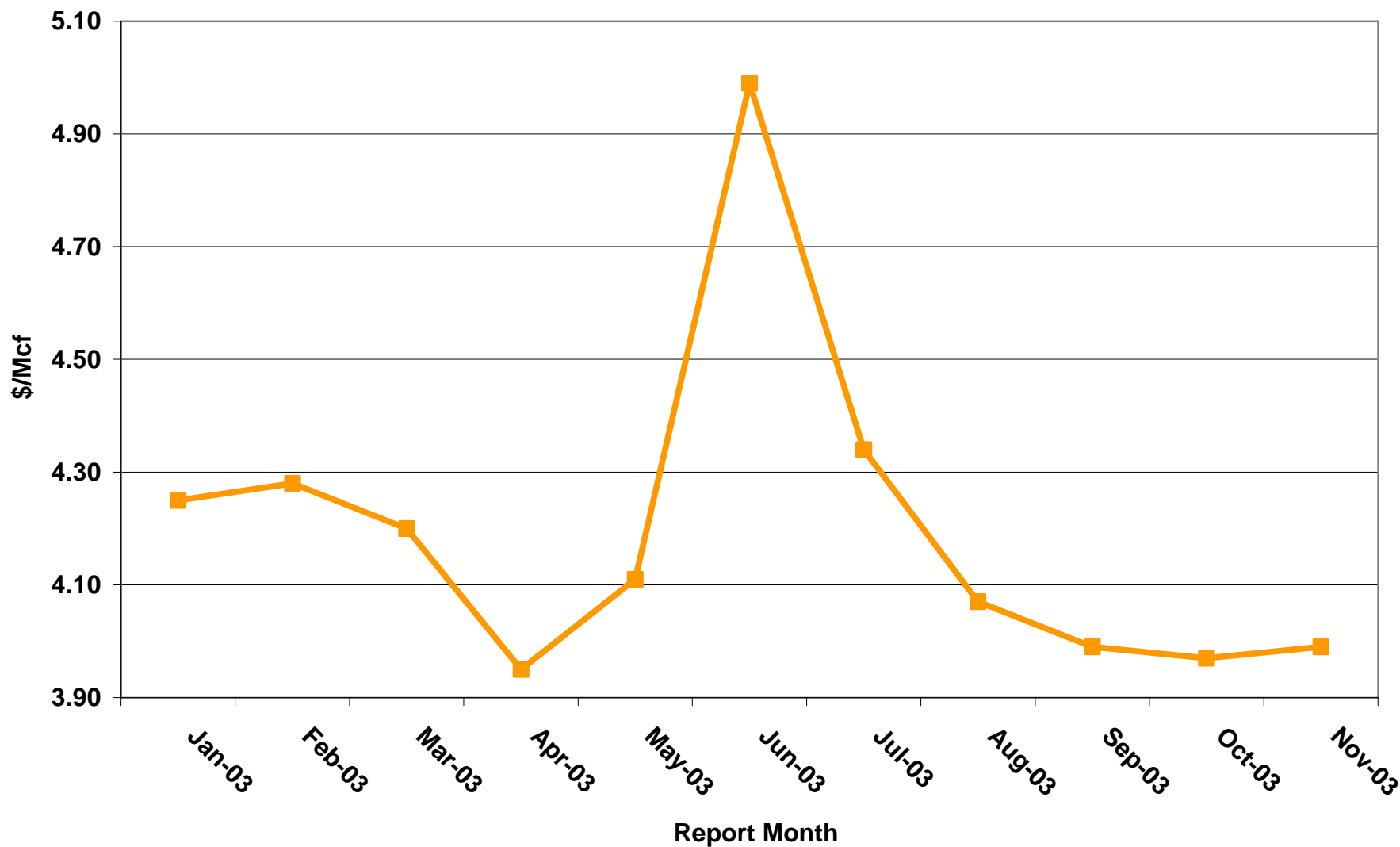
² "Now" forecast is for next 3-4 years (starting in 2004)

NYMEX HENRY HUB FUTURES CONTRACTS
TEN DAY AVERAGE OF RECENT CLOSING PRICES (\$/MMBtu)
(11/13/03 - 11/26/03)

<u>Line</u>	<u>Month</u>	<u>2004</u> (1)	<u>2005</u> (2)	<u>2006</u> (3)	<u>Average</u> (4)
1	Jan	5.016	5.100	5.004	5.040
2	Feb	5.044	5.062	4.974	5.027
3	Mar	4.940	4.911	4.834	4.895
4	Apr	4.634	4.556	4.558	4.583
5	May	4.600	4.478	4.478	4.519
6	Jun	4.613	4.495	4.474	4.527
7	Jul	4.630	4.518	4.483	4.543
8	Aug	4.649	4.538	4.496	4.561
9	Sep	4.638	4.526	4.493	4.552
10	Oct	4.651	4.551	4.532	4.578
11	Nov	4.813	4.723	4.721	4.752
12	Dec	4.987	4.903	4.889	4.926
13	Average	4.768	4.697	4.661	4.709

Source: NYMEX.com "Daily Natural Gas Market Data"

**EIA/SHORT-TERM ENERGY OUTLOOK
 FORECASTED 2004 NATURAL GAS WELLHEAD PRICES (\$/Mcf)
 (January 2003 - November 2003 Reports)**



Source: Monthly EIA Short-Term Energy Outlook