Exhibit No.:

Witness: Maurice Brubaker

Type of Exhibit: Supplemental Direct Testimony

Issue: True-Up Filing

Sponsoring Party: Federal Executive Agencies,

Sedalia Industrial Energy Users' Association

Ag Processing, Inc. a Cooperative, with St. Joe Industrial Group

Case No.: ER-2007-0004

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 areas

Case No. ER-2007-0004

Supplemental Direct Testimony and Schedules of

Maurice Brubaker

On behalf of

Federal Executive Agencies
Sedalia Industrial Energy Users' Association
Ag Processing, Inc. a Cooperative, with St. Joe Industrial Group

Project 8629 February 27, 2007



"NON-PROPRIETARY"

Version

Before the Public Service Commission of the State of Missouri

Networks-MPS and for authority to file rates for the service in the Aquila Netw	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 areas						
STATE OF MISSOURI)) SS						
COUNTY OF ST. LOUIS)						

Affidavit of Maurice Brubaker

Maurice Brubaker, being first duly sworn, on his oath states:

- 1. My name is Maurice Brubaker. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000. We have been retained by the Federal Executive Agencies, the Sedalia Industrial Energy Users' Association and Ag Processing, Inc. a Cooperative, with St. Joe Industrial Group in this proceeding on their behalf.
- 2. Attached hereto and made a part hereof for all purposes is my supplemental direct testimony and schedules which was prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2007-0004.
- 3. I hereby swear and affirm that the testimony and schedules are true and correct and that they show the matters and things they purport to show.

Maurice Brubaker

Subscribed and sworn to before this 27th day of February, 2007.

CAROL SCHULZ

Notary Public - Notary Seal

STATE OF MISSOURI

St. Louis County

My Commission Expires: Feb. 26, 2008

Notary Public Solut

My Commission Expires February 26, 2008.

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 areas

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Case No. ER-2007-0004

Supplemental Direct Testimony of Maurice Brubaker

- 1 Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
- 2 A Maurice Brubaker. My business address is 1215 Fern Ridge Parkway, Suite 208,
- 3 St. Louis, Missouri 63141-2000.
- 4 Q WHAT IS YOUR OCCUPATION?
- 5 A I am a consultant in the field of public utility regulation and president of Brubaker &
- 6 Associates, Inc., energy, economic and regulatory consultants.
- 7 Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.
- 8 A This information was provided in Appendix A to my revenue requirements testimony.
- 9 Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?
- 10 A I am appearing on behalf of the Federal Executive Agencies (FEA), Sedalia Industrial
- 11 Energy Users' Association (SIEUA) and Ag Processing, Inc. a Cooperative, with
- 12 St. Joe Industrial Group (AP-SJIG). The FEA, and the SIEUA and AP-SJIG
- memberships are large energy consumers with facilities served by Aquila-L&P and
- 14 Aguila-MPS.

INTRODUCTION

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Aquila recently provided (received by us on February 12) an update of its initial filing, which I will refer to as the "true-up" filing. Pursuant to the schedule established by the Commission, other parties were provided the opportunity to file testimony responsive to this update.

Accordingly, the purpose of this filing is to respond to the Aquila true-up filing. Because of the timing of the filing by Aquila, and the date provided for filing of this testimony, responses to the discovery which we issued promptly upon receipt of the true-up filing are not officially due until after February 27. Aquila has been very cooperative in providing responses earlier than the deadline, but not all of the information necessary to fully respond to the true-up filing has yet been received and processed. Accordingly, it may be necessary to provide further supplemental testimony on some issues.

OVERALL REVENUE REQUIREMENT

HOW DID THE TRUE-UP FILING MODIFY AQUILA'S REQUESTED RATE INCREASE?

In the case of SJL&P, the initial filing requested \$24.4 million and the revised true-up shows a claimed revenue deficiency of \$24.1 million.

In the case of MPS, the initial filing requested an overall rate increase of \$94.4 million, and the revised true-up calculates a claimed revenue deficiency of \$55.9 million. The majority of the difference in the case of MPS is attributable to the fact that the initial filing assumed acquisition of the Aries generation facility, while in

1		actuality Aquila was not able to acquire this facility and instead has filled its 2007
2		summer capacity needs through short-term purchased power contracts.
3		ADJUSTMENTS TO CLAIMED REVENUE REQUIREMENTS
4	Q	WHAT DO YOU ADDRESS IN THIS SECTION OF YOUR TESTIMONY?
5	Α	In this section, I will address updates to the revenue requirement adjustments offered
6		in my direct testimony, as well as certain other aspects of the revenue requirement
7		claims that have emerged in the course of reviewing the true-up material.
8	MPS	Capacity Deficit
9	Q	YOU PREVIOUSLY ALLUDED TO A DIFFERENCE IN HOW AQUILA ASSUMED IT
0		WOULD MEET THE CAPACITY DEFICIT WHICH MPS EXHIBITS FOR THE
1		SUMMER OF 2007. BY WHAT AMOUNT DID THE ACTUAL CONTRACTS
2		EXECUTED FOR THE SUMMER OF 2007 CHANGE AQUILA'S PURCHASED
3		POWER DEMAND CHARGE ADJUSTMENT FOR MPS?
4	Α	When Aquila substituted the contract prices for these purchases for its original
15		adjustment, the amount of adjustment for capacity costs (FPP-20) decreased from
6		*****
7	Q	DO YOU HAVE ANY COMMENTS WITH RESPECT TO AQUILA'S NEW
8		ADJUSTMENT?
19	Α	Yes. In general terms, it is consistent with the adjustment that I proposed in my direct
20		testimony. Aquila replaces the estimated costs associated with Aries with the actual

contract prices for the capacity purchases.

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While Aquila's calculations are consistent with how I approached the adjustment in my direct testimony, it is important to recognize that the Commission Staff has an alterative approach to Aquila's planning issues and revenue requirement determination associated with meeting capacity needs. If the Commission adopts Staff's approach, then the amounts associated with these purchased power contracts would not be included in the revenue requirements.

High Btu Western Coal

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- 8 Q HAVE YOU UPDATED YOUR CALCULATIONS WITH RESPECT TO THE
- 9 REDUCTION TO THE CLAIMED REVENUE REQUIREMENT ASSOCIATED WITH
- 10 THE C.W. MINING ISSUE?
- 11 A Yes. In the true-up filing, the number of tons of high Btu western coal purchased at
- Lake Road was ****** and a total of ******. With a cost difference of ******, the overall
- adjustment becomes ******. This adjustment is only slightly smaller than the one
- 14 discussed in my direct testimony.

15 **Assumed Cost for Natural Gas**

- 16 Q IN ITS TRUE-UP, HOW DID AQUILA ESTIMATE THE COST OF NATURAL GAS?
- 17 A Aquila continues to use futures prices for 2007. To estimate the monthly prices for
- 18 2007, Aquila averaged the daily reports of 2007 futures prices over the last three
- 19 months of 2006.
- 20 Q DO YOU HAVE ANY CONCERNS WITH THIS APPROACH?
- 21 A Yes, I do. Recently, natural gas futures prices have exhibited significant volatility,
- and, since September of 2005, have exhibited what I would call a "fear factor" which

has kept the futures prices generally much higher than what the actual cash prices have turned out to be as the forward month becomes an actual month. This continues to be the case. Aquila's true-up filing used January and February 2007 Henry Hub prices of about \$8 MMBtu. The actual end of December 2006 closing price for the January 2007 contract was \$5.84 and the end of January close for the February 2007 contract was \$6.92. Obviously, Aquila's estimated prices for January and February that are included in its revenue requirement are substantially in excess of what the actual prices turned out to be.

WHAT DO YOU RECOMMEND BE USED FOR NATURAL GAS PRICES?

I believe the most reliable and appropriate values would be to use experience for the most recent 12-month period. This data is the most current actual available, and its use avoids some of the problems associated with the "fear factor" that continues to influence the futures prices.

14 Q IF AQUILA'S NATURAL GAS PRICES ARE ADJUSTED TO A DIFFERENT LEVEL, 15 DOES THIS REQUIRE ADJUSTMENT TO PURCHASED POWER EXPENSES AS

WELL?

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Yes. Adjustments similar to what I described in my direct testimony would be appropriate to recognize the relationship between natural gas prices and spot power purchased prices.

1 Q HAVE YOU DEVELOPED THE NATURAL GAS PRICES THAT YOU RECOMMEND

2 BE USED?

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Yes. This is shown on Schedule MEB-TU-1. Column 1 shows, for reference, the
Henry Hub prices. Column 2 shows the actual prices delivered to Aquila, which
include recognition of the basis differential. The January and February values are
from 2007, and the values for the subsequent months are from 2006. Accordingly,
this represents the most recent 12 months of information.

8 Q IF THE NATURAL GAS PRICES ARE ADJUSTED, WHAT IMPACT DOES THIS 9 HAVE ON FUEL AND PURCHASED POWER COSTS?

First, a different price for natural gas will change the cost of generation from gas-fired facilities. Second, since there is a correlation between the price of natural gas and the spot market purchased power prices, there will be a change in the level of these costs as well. In the context of Aquila's true-up filing, the purchased power categories that will be affected are the spot purchases, the PJM A, B and C purchases (MidAmerican) and the UPP 3 purchases. UPP 3 purchases are directly affected because the pricing mechanism ties the purchased cost of energy directly to the Henry Hub price of natural gas. Thus, this relationship is explicit, whereas the relationship for the other purchased power categories is based on fuel and electric market price relationships.

Aquila's Hedging Program

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2 Q ARE YOU FAMILIAR WITH AQUILA'S HEDGING PROGRAM?

Yes. Aquila's hedging program specifies that approximately one-third of its natural gas and related requirements will be under fixed price swap arrangements, one-third under call option contracts, and one-third to float with the market. Aquila hedges natural gas not only for the expected direct gas burns in generating facilities, but also as a hedge against the cost of purchased power. According to Mr. Gottsch's testimony (page 3), Aquila plans to hedge for its on-peak electricity purchases, which he indicated represent approximately ****** of the total volume of power purchased from the spot markets.

11 Q HAVE YOU REVIEWED AQUILA'S EXPECTED GAS NEEDS FOR ELECTRIC

GENERATION AND GAS NEEDED TO HEDGE ITS GAS-SENSITIVE PURCHASED

POWER REQUIREMENTS?

14 A Yes. This is shown on Schedule MEB-TU-2. This schedule was developed by
15 examining the Real Time runs included with Aquila's true-up filing.

16 Q HOW DOES AQUILA'S HEDGE POSITION COMPARE WITH THE 17 SPECIFICATIONS IN ITS RISK MANAGEMENT PROGRAM?

Aquila is substantially over-hedged. Page 2 of Schedule MEB-TU-2 shows that Aquila has hedged with swaps approximately ****** as compared to a much lower requirement in accordance with its risk management program. Column 6 shows that Aquila was over-hedged by ******. Column 8 shows the mark-to-market value of the swaps, and column 9 shows the recommended \$4.5 million disallowance because of the over-hedged position.

Q	HAVE YOU ALSO EXAMINED THE NATURAL GAS CALL OPTIONS IN
	RELATION TO THE HEDGE REQUIREMENTS PURSUANT TO THE RISK
	MANAGEMENT PROGRAM?
Α	Yes. This is shown on page 3 of Schedule MEB-TU-2. Again, Aquila is over-hedged
	on its call options. Column 9 calculates the disallowance for the excess hedge
	position is \$865,000.
Q	HAVE YOU SUMMARIZED THE ADJUSTMENTS WHICH YOU HAVE MADE TO
	AQUILA'S TRUE-UP FILING?
Α	Yes. This appears on Schedule MEB-TU-3. The top line on page 1 is Aquila's
	revised true-up position. Below that are shown the specific adjustments that I have
	recommended.
	There are adjustments to reflect the revised cost of natural gas burned in
	Aquila's generators, a repricing of the UPP3 adjustment to reflect the revised cost of
	gas, adjustments to the spot purchases and the PJM purchases to reflect a lower cost
	of gas, and the C.W. Mining adjustment which I have discussed previously. The
	development of the adjustments is detailed on the subsequent pages of Schedule
	MEB-TU-3.
	The adjusted amount is then allocated between MPS and L&P, and other
	adjustments such as the hedge program impact, the cost of propane, fuel adders and
	other adjustments are taken into account.
	The bottom portion of the schedule shows the purchased power capacity
	costs. I have not made any adjustments to these amounts, but have included them
	A Q

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for completeness.

Allocation Between MPS and L&P

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- 2 Q IN YOUR DIRECT TESTIMONY, YOU EXPRESSED SIGNIFICANT CONCERN
 3 ABOUT THE EVIDENCE WITH RESPECT TO THE APPROPRIATE ALLOCATION
 4 OF FUEL AND VARIABLE PURCHASED POWER COSTS BETWEEN MPS AND
 5 L&P. HAVE YOU CONTINUED TO ANALYZE THAT ISSUE?
- Yes, I have. I've also had the benefit of reviewing the Real Time model runs (joint and stand alone) filed by the MPSC Staff in its direct case, and similar information contained in Aquila's true-up filing. In addition, Aquila has provided some additional information about how the actual hourly assignment of costs is accomplished.

BASED ON THIS INFORMATION, WHAT IS YOUR RECOMMENDATION?

First, let me indicate that I believe, if the process is done properly, is documented as to methodology and auditable as to hourly assignments, that looking at the utility system on an hourly basis and considering the loads of each utility, the cost and availability of its own generation resources and purchased power contracts, and off-system sales opportunities, that the hourly assignment basis is probably most accurate. The concern I have at this point continues to be that the methodology is not well documented, and would appear to be virtually unauditable. Further, to the extent that examples of the hourly assignments have been provided (one hour only), there is no guidance with respect to how a determination is made as to which utility will receive the benefit of off-system sales margins, or how the margins will be calculated.

As a result, I recommend that between this rate case and the next rate case (or whenever changes are made to the allocations), that the percentage of costs going to each operating company be a fixed percentage, which would not vary

- between rate cases. During this time interval, Aquila should more carefully develop
 and document its allocation procedures, including how to handle off-system sales.

 Establishing a working group composed of representatives of Aquila, MPSC Staff,

 OPC and other interested parties who are participating in this proceeding would be a
 reasonable approach to developing the necessary structure and the documentation.
- 6 Q WHAT ALLOCATION PERCENTAGES DO YOU RECOMMEND BE USED IN THIS
 7 CASE, AND IN THE INTERIM PERIOD?
- 8 A I recommend using the average of percentages from the stand-alone model runs in 9 the Commission Staff's direct testimony, and in Aquila's direct and true-up filings. 10 The L&P percent would be 19.0 and the MPS percent would be 81.0.
- 11 Q DOES THIS CONCLUDE YOUR TRUE-UP TESTIMONY?
- 12 A Yes, it does.

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RECENT NATURAL GAS PRICE INFORMATION (\$/MMBTU)

Line	Month	Actual NYMEX Settle	Aquila Actual Commodity Costs 1	Avg. of Fuel and Additional Charges	Aquila Burner Tip Price
		(1)	(2)	(3)	(4)
1	Mar-06				
2	Apr-06				
3	May-06				
4	Jun-06				
5	Jul-06				
6	Aug-06				
7	Sep-06				
8	Oct-06				
9	Nov-06				
10	Dec-06				
11	Jan-07				
12	Feb-07				

SUMMARY OF NATURAL GAS HEDGE POSITIONS

Line	Month	Adjusted Mark-to Market of all Hedges ¹	Disallowance for Over- Hedged SWAP Positions ²	Disallowance for Over- Hedged Call Positions ³	Total Disallowances	Revised Cost of Natural Gas Hedges
		(1)	(2)	(3)	(4)	(5)
1	Jan					
2	Feb					
3	Mar					
4	Apr					
5	May					
6	Jun					
7	Jul					
8	Aug					
9	Sep					
10	Oct					
11	Nov					
12	Dec					
13	Total					

ADJUSTMENT TO NATURAL GAS SWAP POSITIONS

Line	Month	Total On-Peak PP Exposure in MMBtu ¹	Expected Gas Use For Generation MMBtu	Total Natural Gas Exposure to Hedge	Amount to be Hedged With SWAPS (1/3)	Actual Amount Hedged With SWAPS	Amount Over Hedged ²	Percent Over- Hedged ³	Adjusted Mark-to Market of SWAPS	Disallowance for Over- Hedge Position ⁴	Cost of Hedges Allowed ⁵
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Jan										
2	Feb										
3	Mar										
4	Apr										
5	May										
6	Jun										
7	Jul										
8	Aug										
9	Sep										
10	Oct										
11	Nov										
12	Dec										
13	Total										

ADJUSTMENT TO NATURAL GAS CALL POSITIONS

Line	Month	Total On-Peak PP Exposure in MMBtu ¹	Expected Gas Use For Generation MMBtu	Total Natural Gas Exposure to Hedge	Amount to be Hedged With CALLS (1/3)	Actual Amount Hedged With CALLS	Amount Over Hedged ²	Percent Over- Hedged ³	Adjusted Mark-to Market of SWAPS	Disallowance for Over- Hedge Position ⁴	Cost of Hedges Allowed ⁵
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Jan										
2	Feb										
3	Mar										
4	Apr										
5	May										
6	Jun										
7	Jul										
8	Aug										
9	Sep										
10	Oct										
11	Nov										

12

13

Dec

Total

AMOUNT OF NATURAL GAS TO HEDGE

Projected Purchase Power (MWh)	Average \$/MWh	Average Burner Tip \$/MMBtu	Calculated Heat Rate	Total Exposure (MMBtu)	On-Peak Exposure 85% Rule (MMBtu)
(1)	(2)	(3)	(4)	(5)	(6)
Spot 1 & 2 Purch	nases:				
PJM A, B, C Pure	chases:				
UPP3 Purchases	<u>s ¹:</u>				
Total Purchases	<u>:</u>				

NATURAL GAS AND PURCHASED POWER ENERGY & CAPACITY COSTS

LINE	DESCRIPTION	TRUE-UP FILING	PER BOOKS TYE 12/31/05 ³	AQUILA'S ORIGINAL FILING	AQUILA'S REVISED TRUE-UP FILING
1	Aquila Revised True-Up Fuel & PP (Energy Only)				
2	UPP3 Adjustment (Page 2)				
3	Spot Purchased Power Adjustment (Page 3)				
4	PJM Purchased Power Adjustment (Page 4)				
5	Natural Gas Generation Adjustment (Page 5)				
6	CW Mining Adjustment (Page 6)				
7	Revised Fuel & PP Expense				
	MPS Analysis				
8	Percent Allocation to MPS				
9	Total Annualized Fuel and Purchase Power				
10	Impact of Hedge Program (Schedule MEB-TU-2)				
11	Hedge Disallowance (Schedule MEB-TU-2)				
12	Annualized TDF & Propane (Fixed)				
13 14	Annualized Fuel Adders (Fixed) Total Fuel & Purchased Power Costs				
15	Juris Factor (Energy)				
16	Adjustment (Elec-Juris)				·
17 18 19 20 21 22 23	L&P Analysis Percent Allocation to L&P Total Annualized Fuel and Purchase Power Annualized TDF & Propane (Fixed) Annualized Fuel Adders (Fixed) Total Fuel & Purchased Power Costs Juris Factor (Energy) Adjustment (Elec-Juris)				
	Purchased Power Capacity				_
25	MPS				
26	Juris Factor #3 (Demand)				
27	Adjustment (Elec-Juris)				
28	L&P (Electric Only)				
29	Juris Factor (Energy)				
30	Adjustment (Elec-Juris)				
31	Total				

Total MPS Energy & Capacity
 Total L&P Energy & Capacity
 Total Company Energy & Capacity

ADJUSTMENT TO UPP3 PURCHASE POWER COSTS

Line	Month	Aquila Projected Purchases UPP3 (MWh)	NYMEX Henry Hub NG Price \$/MMBtu	Heat Rate	Projected Energy Price \$/MWh ¹	Avg Variable Expense Adder	Total Energy Price \$/MWh ²	Total Cost of UPP3 Purchases ³	Total UPP3 Cost Built into Aquila Model	Adjustment Required
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Jan									
2	Feb									
3	Mar									
4	Apr									
5	May									
6	Jun									
7	Jul									
8	Aug									
9	Sep									
10	Oct									
11	Nov									
12	Dec									
13	Total									

Notes:

ADJUSTMENT TO SPOT 1 & 2 PURCHASED POWER COSTS

Line	Month	Aquila Projected Spot 1 & 2 Purchases (MWh)	Aquila Projected Avg. Cost \$/MWh	Total Projected Costs	Adjusted Avg. Cost \$/MWh	Total Adjusted Costs	Adjustment Required
1	Jan						
2	Feb						
3	Mar						
4	Apr						
5	May						
6	Jun						
7	Jul						
8	Aug						
9	Sep						
10	Oct						
11	Nov						
12	Dec						
13	Total						

ADJUSTMENT TO PJM A, B, & C PURCHASED POWER COSTS

Line	Month	Aquila Projected PJM A,B,C Purchases (MWh)	Aquila Projected Avg. Cost \$/MWh	Total Projected Costs	Adjusted Avg. Cost \$/MWh	Total Adjusted Costs	Adjustment Required
1	Jan						
2	Feb						
3	Mar						
4	Apr						
5	May						
6	Jun						
7	Jul						
8	Aug						
9	Sep						
10	Oct						
11	Nov						
12	Dec						
13	Total						

ADJUSTMENT TO NATURAL GAS GENERATION COSTS

Line	Month	Aquila Projected Natural Gas Burned (MMBtu)	Aquila Projected Avg NG Burner Tip \$/MMBtu	Total Projected Costs	Actual Natural Gas Burner Tip \$/MMBtu	Total Costs	Adjustment Required
1	Jan						
2	Feb						
3	Mar						
4	Apr						
5	May						
6	Jun						
7	Jul						
8	Aug						
9	Sep						
10	Oct						
11	Nov						
12	Dec						
13	Total						

CW MINING ADJUSTMENT

Line	Description	Tons of HBTU Coal
1	Lake Road	
2	Sibley:	
3	Unit 1	
4	Unit 2	
5	Unit 3	
6	Total	
7	Total	
8	Cost Difference/Ton	
9	Lake Road Adjustment	
10	Sibley Adjustment	
11	Total Adjustment	