Exhibit No.:	
Issues:	Class Cost of Service Rate Design
Witness:	Thomas M. Imhoff
Sponsoring Party:	MO PSC Staff
Type of Exhibit:	Direct Testimony
Case No.:	GR-2004-0072
Date Testimony Prepared:	January 13, 2004

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

DIRECT TESTIMONY

OF

THOMAS M. IMHOFF

AQUILA, INC. D/B/A AQUILA NETWORKS MPS AND AQUILA NETWORKS L&P

CASE NO. GR-2004-0072

Jefferson City, Missouri
January 2004

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 Natural Gas General Rate Increase	)))	Case No. GR-2004-0072

AFFIDAVIT OF THOMAS M. IMHOFF

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Thomas M. Imhoff, of lawful age, on his oath states: that he has participated in the preparation of the following written testimony in question and answer form, consisting of 14 pages of testimony to be presented in the above case, that the answers in the following written testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.

Thomas M. Imhoff

Subscribed and sworn to before me this 12th day of January, 2004.

Notary Public

My commission expires_____

SHARON S WILES
Notary Public - Notary Seal
STATE OF MISSOURI
COLE COUNTY
MY COMMISSION EXP. SEPT 11,2006

TABLE OF CONTENTS

COST OF SERVICE 2

RATE DESIGN 10

DIRECT TESTIMONY

OF

THOMAS M. IMHOFF

AQUILA, INC

d/b/a AQUILA NETWORKS-MPS

d/b/a AQUILA NETWORKS-L&P

CASE NO. GR-2004-0072

Q. Please state your name and business address.

A. Thomas M. Imhoff, P.O. Box 360, Jefferson City, Missouri 65102.

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

A. I am the Rate & Tariff Examination Supervisor in the Energy Department of the Missouri Public Service Commission (Commission).

Q. Please describe your educational background.

A. I attended Southwest Missouri State University at Springfield, Missouri, from which I received a Bachelor of Science degree in Business Administration, with a major in Accounting, in May 1981. In May 1987, I successfully completed the Uniform Certified Public Accountant (CPA) examination and subsequently received the CPA certificate. I am currently licensed as a CPA in the State of Missouri.

Q. What has been the nature of your duties with the Commission?

A. From October of 1981 to December 1997, I worked in the Accounting Department of the Commission, where my duties consisted of directing and assisting with various audits and examinations of the books and records of public utilities operating

within the State of Missouri under the jurisdiction of the Commission. On January 5, 1998, I assumed my current position of Regulatory Auditor IV in the Gas Tariffs/Rate Design Department, where my duties consist of analyzing applications, reviewing tariffs and making recommendations based upon those evaluations. On August 9, 2001, I assumed the position of Rate & Tariff Examination Supervisor in the Energy Tariffs/Rate Design Department, where my duties consist of directing Commission Staff within the Department, analyzing applications, reviewing tariffs, and making recommendations based upon my evaluations and the evaluations performed by Staff within the Department.

Q. Have you previously filed testimony before this Commission?

A. Yes. A list of cases in which I have filed testimony before this Commission is attached as Schedule 1 to my Direct Testimony.

Q. With reference to Case No. GR-2004-0072, have you made an examination and study of the material filed by Aquila, Inc. (Aquila or Company) d/b/a Aquila Networks-MPS (MPS) and d/b/a Aquila Networks-L&P (L&P) relating to its proposed increase in gas rates?

A. Yes, I have.

Q. What is the purpose of your Direct Testimony?

A. The purpose of my Direct Testimony is to present the Commission Staff's (Staff) position relating to class cost-of-service (COS) for Aquila, and Staff's position on rate design.

COST OF SERVICE

Q. What customer classes are used in Staff's COS study?

A. The customer classes used in this study are as follows:

Residential
General Service
Interruptible Service
Small Transportation Service
Large Transportation Service

Q. What is the purpose of Staff's class COS?

A. The purpose of Staff's class COS is to provide the Commission with a measure of relative class cost responsibility for the overall revenue requirement of Aquila. For individual items of cost, class cost responsibility can be either directly assigned or allocated to customer classes using reasonable methods for determining the class responsibility for that item of cost. The results are then summarized so that they can be compared to revenues being collected from each class on current rates.

Q. How were the usage levels and class peak demand levels used in your class COS study developed?

A. The annualized usage levels and customer bill counts for the Residential and General Service sales classes were provided by Staff Auditing witness William V. Harris and will be addressed in his Direct Testimony. The annual usage levels and customer bill counts for Interruptible and Transportation customers were developed by Staff witness Anne Ross of the Energy department and will be addressed in her testimony. The class peak demand levels were developed using the usage levels and bill counts discussed above together with the per customer peak demands developed by Staff witness James Gray of the Commissions Energy Tariffs/Rate Design Department and the load factors developed by the Company for the large customers.

Q. What is the source of accounting information used in your class COS study?

A. The study was developed using costs produced by the Commission Auditing Department, which is based on a test year ending December 31, 2002, updated for known and measurable changes through September 30, 2003.

Q. Please describe how you categorized the individual items of cost in the Staff's class COS study.

A. Categorization of costs into functional areas that are to be allocated in the same way is called cost functionalization. The rate base and expense accounts are assigned to one of the following functional categories:

Transmission
Storage
Purchased Gas
Distribution Mains
Distribution Measuring and Regulating
Distribution Meters
Distribution Regulators
Distribution Services
Customer Service
Billing
Meter Reading
Revenue Related

Those costs, which cannot directly be assigned to any specific functional category, are divided among several functions based upon some relational factor. For example, it is reasonable to assume that property taxes are related to gross plant costs and can therefore be funtionalized in the same manner as gross plant costs.

Q. How were Transmission costs allocated?

A. Transmission costs were allocated using the Capacity Utilization allocator, which I developed.

Q. How were Storage costs allocated?

A. Storage is primarily used in winter months; therefore, storage costs were allocated to all sales customers (excluding transportation customers) using sales volumes from the months of November through March.

Q. How were Purchased Gas costs allocated?

A. Even though purchased gas costs are not part of this rate proceeding, there is a certain level of purchased gas costs included as a component of cash working capital. These costs were allocated between the COS classes using gas sales volumes.

Q. How were the costs of Distribution Mains allocated?

A. The allocation factor for Distribution Mains was developed by using the capacity utilization factor described above.

Q. Why is utilization of capacity an appropriate basis for allocating the cost of mains?

A. Mains are an integrated system of pipes that provide service to customers to the degree that the capacity of that system is utilized. While the diameters of the pipes used in that system are sized to carry sufficient volumes to meet peak day demands, the value to the customer from the system occurs throughout the year, not just on the peak day. The allocation of the cost of mains should reflect the total value that customers derive from the service throughout the year. Utilization of the capacity of mains is a reasonable way of measuring how the various classes of customers benefit from that portion of the local distribution system.

Q. How did you measure the capacity utilization of mains?

A. First, the relative amount of capacity utilized in each month of the year is calculated. Then, in each month that relative amount of capacity is allocated to the classes based on their contribution to the monthly peak demand. These allocations are added over all twelve months to derive the annual capacity utilization of each class.

The calculation of the relative amount of capacity utilized in each month is made by ranking the months from the lowest to highest in terms of peak demand. The capacity used in the lowest demand month is obviously utilized in all other months as well. The additional capacity used in the next lowest demand month is utilized in all higher demand months, but not in the lowest demand month. Applying this same principle to each succeeding month results in a determination of the relative amount of capacity being utilized in each month.

Q. Is capacity utilization equivalent to total gas usage by the classes?

A. No, it is not. A class with more efficient utilization of capacity requires less capacity to provide the same total gas usage than one that utilizes the capacity in a less efficient manner. Consider a simple example of two classes having the same total usage of 100 MCFs per year. The class having perfect efficiency of capacity utilization takes 50 MCFs in both the off-peak and on-peak periods. The class having less efficient use of capacity takes 30 MCFs in the off-peak period and 70 MCFs in the on-peak period. Notice that the capacity required in the off-peak period is 80 (50 + 30) MCFs and the capacity required in the on-peak period is 120 (50 + 70) MCFs. Out of a total capacity of 120 MCFs, 80 MCFs of capacity is utilized in both periods, but an additional 40 (120 - 80) MCFs is needed to serve the on-peak period. If both classes had perfect efficiency

(50 MCFs each in both periods), then the total capacity required would have only been 100 (50 + 50) MCFs. Clearly, the less efficient use of capacity by the one class has resulted in additional capacity being added to the system.

Q. Can you continue with your example to explain how capacity utilization is determined for each class?

A. Yes. The 80 MCFs of capacity required to meet the off-peak demand is also used to meet a portion of the on-peak demand. Assuming equal period lengths, half of this 80 MCFs of capacity is allocated equally to both periods (i.e., 40 MCFs off peak and 40 MCFs on-peak). The additional 40 MCFs of capacity required to serve the on-peak period is assigned to only that period. The result is, that of the 120 MCFs of total capacity, 40 MCFs goes to the off-peak period and 80 MCFs goes to the on-peak period.

The classes are then allocated the capacities from each period based on their contribution to demand (usage) as shown in the following table.

	Class 1		Class 2		Total	
	Usage	Capacity	Usage	Capacity	Usage	Capacity
Off-Peak	50	25	30	15	80	40
On-Peak	50	33.33	70	46.67	120	80
Total	100	58.33	100	61.67	200	120

While the total usage for each class is the same (100 MCFs each), the capacity utilized by the more efficient class 1 (58.33 MCFs) is less than the capacity utilized by the less efficient class 2 (61.67 MCFs).

Q. How were the costs of Distribution Meters and Distribution Regulators allocated?

A. The allocation factors for Distribution Meters and Distribution Regulators were developed by the Company.

Q. How were the costs of Distribution Service Lines allocated?

A. These costs were allocated using the factor developed by the Company.

Q. How were costs associated with Distribution Measuring and Regulating allocated?

A. This type of cost is associated with equipment used to measure and regulate natural gas before it reaches individual customers' service lines, so these costs were allocated using annualized Ccf volumes.

Q. How were Customer Service costs allocated?

A. These costs are associated with the number of customers being served; therefore, they were allocated using the number of annual bills for each customer class using weights developed by the Company.

Q. How were the costs of the Customer Billing function allocated?

A. These costs were allocated by the number of annual bills together with the weights developed by the Company for each customer.

Q. How were Meter Reading costs allocated?

A. These costs were allocated by using the weighted customer numbers. The weighted numbers used reflect the Company's weights.

Q. How were the Revenue Related costs allocated?

A. These costs were allocated using Staff's annualized margin revenues.

Q. What are the results of your class COS studies?

A. The results for the MPS – Northern and Southern Districts are shown on Schedule 2, the results for the MPS – Eastern District are shown on Schedule 3, the results for the L&P District are shown on Schedule 4, and all are presented in terms of class revenue requirements before any increase in the Company's respective revenue requirements by district.

Q. How have you compared the class COS study results to current revenues?

A. Revenue requirement is a major component in this case and the Commission must have a recommendation about class revenue requirements that it can apply to any increase in revenue requirement that is ultimately decided. In order to make such a recommendation, I have factored the Staff's class COS to be equal to the revenue level collected from current rates. The same factor was applied to the allocated costs for each class (i.e., each class' costs were decreased by an equal percentage). When subtracting the results from current revenues, a revenue deficiency (-) or revenue surplus (+) for each class is reflected.

Q. What is the impact of your class COS study on the various customer classes?

A. The class COS study shows that revenues should be collected differently than is occurring under current rates. However, it should be noted that the miscellaneous revenues include over $200,000 in additional revenues for the proposed changes in some of the miscellaneous charges as described in the testimony of Staff witness James Russo of the Commissions Energy Tariffs/Rate Design Department.

RATE DESIGN

Q. Did you compute customer charge levels based on your COS study?

A. Yes. The customer charge levels indicated by the COS studies are shown in Schedules 5, 6 and 7 representing the MPS – Northern and Southern Districts, MPS – Eastern District and the L&P District respectively.

Q. How were the customer charges determined in your class COS study?

A. My class COS study identified a customer charge based on the direct costs associated with distribution service lines, distribution meters and regulators, billing, meter reading and customer service expenses.

Q. What customer charge are you proposing for the MPS – Northern and Southern District Residential classes?

A. I am proposing no change to the customer charge of $9.00 for the Residential class.

Q. What customer charge are you proposing for the L&P District Residential classes?

A. I am proposing a customer charge of $7.00 for the Residential class. The current Residential customer charges are either $5.65 or $6.66 depending on the district.

Q. What are you proposing as a customer charge for the MPS – Northern and Southern District General Service class?

A. I am proposing no change to the customer charge of $15.00 for the General Service class.

Q. What are you proposing as a customer charge for the L&P District General Service class?

A. I am proposing a customer charge of $12.50 for the General Service class from a current customer charge of $9.39.

Q. What customer charge are you proposing for the MPS – Northern and Southern District Large Customer groups of Large Volume Firm, Large Volume Interruptible, and Large Volume Transportation classes?

A. I am proposing no change to the class customer charge of $215.00 for the MPS – Northern and Southern District for these classes.

Q. What customer charge are you proposing for the L&P District Large Service class?

A. I am proposing no change to the Large Service class customer charge of $184.53 for the L&P District.

Q. What are you proposing as a customer charge for the MPS – Northern and Southern District Small Volume Transportation class?

A. Staff is supporting the Company's proposal for a $50.00 customer charge.

Q. What are you proposing as a customer charge for the L&P District Transportation class?

A. This class is made up of three rate classes: the Small Volume Transportation (SJLP-920) rate, the Small Volume Transportation (SJLP) –921) rate and the Large Volume Transportation rate. Staff is supporting the Company's proposal for a $40.00 customer charge for both Small Volume Transportation rates. Staff proposes to increase the customer charge for the Large Volume Transportation rate from $47.25 to $200.

Q. How were the margin commodity rates from your class COS study calculated?

A. To determine the margin commodity rates from the class COS study, I subtracted the dollars collected from the customer charges from each class' revenue requirement. I then divided the remaining class revenue requirement by the total class Ccf volumes.

Q. Are these the final rates that will collect the revenue requirements that the Commission will allow in this case?

A. No. The revenues used to design these rates do not include any of the rate increase being requested by the Company.

Q. What is your recommendation regarding revenue shifts between classes at Staff's current revenue requirement increase?

A. At Staff's current revenue requirement increase less the miscellaneous charge revenues computed by Staff witness James Russo, Staff recommends an equal percentage increase in class revenues for the remaining classes for the Revenue collected from margin rates. However, since the increase in miscellaneous charges, which are almost always collected from the Residential and General Service customers, is a shift in current revenues, the overall result will be a shift toward the COS results and will be less of an increase for the transportation customers than would result from a simple equal percent increase.

Q. Since you did not recommend an additional movement to COS for each class, what factors did you take into account?

A. Staff took into account the level of the revenue requirement increase, the significant increase in the General Service Customer Charge, and the significant increase in the cost of gas (those collected through the Purchased Gas Adjustment/ Actual Cost Adjustment (PGA/ACA) process). Staff also took into account, the special contract customers' effect on transportation revenues. Since the level of the revenue requirement increase has not been determined by the Commission, and the level of the winter PGA/ACA rates are high, Staff recommends that the Commission take these factors into account when determining the final revenue shifts between classes.

Q. Although you have discussed the rates for the Northern, Southern and L&P systems, you did not propose rates for the Eastern System. What is your recommendation for the Eastern System?

A. I recommend that the rates for the Eastern System be the same as the rates for the Northern and Southern Systems.

Q. Since the rates for the Northern and Southern Systems were designed to collect the revenue requirement for the combination of those two systems, did these same rates also collect the revenue requirement for the Eastern System?

A. No. Although these rates collect more revenue than the annualized test year level, it is still significantly below the level indicated by the Staff's Accounting Schedules. The development of these separate Accounting Schedules by Staff is in compliance with the Commission's Order in Case No. GA-94-325, which called for the Company to maintain and provide to the Staff, a separate and complete accounting upon proper request in any future rate or complaint proceeding. This was established to provide evidence that no subsidization has occurred.

Staff is not opposed to the Company's proposal to have the same rates for the Eastern System as those that are in the Northern and Southern Systems. However, Staff maintains that these rates should be based on the level of cost of service for the Northern and Southern Systems to avoid any subsidization of the Eastern System. This proposal is due to the significant impact (approximately 75% increase in margin rates) the Company's Eastern District customers would incur, and the likelihood that these customers would switch to competitive alternative fuels such as propane. The revenue shortfall from the Eastern District would be paid for by the Company.

Q. Does this conclude your Direct Testimony?

A. Yes it does.

AQUILA, INC
d/b/a AQUILA NETWORKS – MPS
d/b/a AQUILA NETWORKS – L&P
CASE NO. GT-2004-0072

Summary of Cases in which prepared testimony was presented by:
THOMAS M. IMHOFF

Company Name	Case No.
Terre-Du-Lac Utilities	SR-82-69
Terre-Du-Lac Utilities	WR-82-70
Bowling Green Gas Company	GR-82-104
Atlas Mobilfone Inc.	TR-82-123
Missouri Edison Company	GR-82-197
Missouri Edison Company	ER-82-198
Great River Gas Company	GR-82-235
Citizens Electric Company	ER-83-61
General Telephone Company of the Midwest	TR-83-164
Missouri Telephone Company	TR-83-334
Mobilpage Inc.	TR-83-350
Union Electric Company	ER-84-168
Missouri-American Water Company	WR-85-16
Great River Gas Company	GR-85-136
Grand River Mutual Telephone Company	TR-85-242
ALLTEL Missouri, Inc.	TR-86-14
Continental Telephone Company	TR-86-55
General Telephone Company of the Midwest	TC-87-57
St. Joseph Light & Power Company	GR-88-115
St. Joseph Light & Power Company	HR-88-116
Camelot Utilities, Inc.	WA-89-1
GTE North Incorporated	TR-89-182
The Empire District Electric Company	ER-90-138
Capital Utilities, Inc.	SA-90-224
St. Joseph Light & Power Company	EA-90-252
Kansas City Power & Light Company	EA-90-252
Sho-Me Power Corporation	ER-91-298
St. Joseph Light & Power Company	EC-92-214
St. Joseph Light & Power Company	ER-93-41
St. Joseph Light & Power Company	GR-93-42
Citizens Telephone Company	TR-93-268
The Empire District Electric Company	ER-94-174
Missouri-American Water Company	WR-95-205
Missouri-American Water Company	SR-95-206
Union Electric Company	EM-96-149
The Empire District Electric Company	ER-97-81
Missouri Gas Energy	GR-98-140
Laclede Gas Company	GR-98-374

Laclede Gas Company	GR-99-315
Atmos Energy Corporation	GM-2000-312
Ameren UE	GR-2000-512
Missouri Gas Energy	GR-2001-292
Laclede Gas Company	GT-2001-329
Laclede Gas Company	GR-2001-629
Missouri Gas Energy	GT-2003-0033
Aquila Networks – L&P	GT-2003-0038
Aquila Networks – MPS	GT-2003-0039
Southern Missouri Gas Company, L.P.	GT-2003-0031
Fidelity Natural Gas, Inc.	GT-2003-0036
Atmos Energy Corporation	GT-2003-0037
Laclede Gas Company	GT-2003-0032
Union Electric Company d/b/a Ameren UE	GT-2003-0034
Laclede Gas Company	GT-2003-0117

Aquila Networks - MPS N&S
TEST YEAR ENDED DECEMBER 31, 2002
CASE NO. GR-2004-0072
COST - OF - SERVICE RESULTS

	CHECK COLUMN	TOTAL	RESIDENTIAL	GENERAL SERVICE	INTERRUPTIBLE	SMALL TRANSPORTATION	LARGE TRANSPORTATION
RATE BASE	$54,171,947	54,171,947	$29,780,289	$12,250,122	$0	$38,618	$12,102,918
REQUESTED RETURN	8.18%	8.18%	8.18%	8.18%	8.18%	8.18%	8.18%
RETURN ON RATE BASE	4,431,265	4,431,265	2,436,028	1,002,060	0	3,159	990,019
O & M EXPENSES	9,170,231	9,170,231	5,696,564	2,044,595	0	6,301	1,422,771
DEPRECIATION EXPENSE	2,406,392	2,406,392	1,372,668	530,026	0	1,735	501,963
TAXES OTHER THAN INCOME	989,627	989,627	559,454	215,200	0	715	214,258
INCOME TAXES	1,036,136	1,036,136	569,602	234,306	0	739	231,490
TOTAL EXPENSES	13,602,386	13,602,386	8,198,288	3,024,127	0	9,489	2,370,482
TOTAL C-O-S	18,033,651	18,033,651	10,634,316	4,026,187	0	12,648	3,360,501
OTHER REVENUES	502,541	502,541	428,341	64,256	0	37	9,907
REQUIRED MARGIN REVENUE	17,531,110	17,531,110	10,205,975	3,961,931	0	12,611	3,350,594
CURRENT MARGIN REVENUES	16,173,925	16,173,925	10,491,889	4,079,731	0	10,457	1,591,848
ZERO REVENUE INCREASE PLUG	-1,357,185	-1,357,185	-790,104	-306,716	0	-976	-259,389
16,676,466	-1,555,560						
C-O-S MARGIN REVENUES @ 0%		16,173,925	9,415,871	3,655,215	0	11,634	3,091,205
REVENUE ABOVE (BELOW) COS		$0	$1,076,018	$424,516	$0	-$1,177	-$1,499,357
PERCENTAGE INCREASE (DECREASE) @ 0% INCREASE		0.00%	-10.26%	-10.41%	#DIV/0!	11.26%	94.19%

SCHEDULE 2

AQUILLA NETWORKS, MPS - EASTERN DISTRICT
TEST YEAR ENDED DECEMBER 31, 2002
CASE NO. GR-2004-0072
COST - OF - SERVICE RESULTS

	CHECK COLUMN	TOTAL	RESIDENTIAL	GENERAL SERVICE	INTERRUPTIBLE	SMALL TRANSPORTATION	LARGE TRANSPORTATION
RATE BASE	$4,801,081	4,801,081	$2,422,772	$1,187,478	$0	$0	$1,190,831
REQUESTED RETURN	8.18%	8.18%	8.18%	8.18%	8.18%	8.18%	8.18%
RETURN ON RATE BASE	392,728	392,728	198,183	97,136	0	0	97,410
O & M EXPENSES	1,426,146	1,426,146	903,015	321,182	0	0	201,949
DEPRECIATION EXPENSE	242,012	242,012	124,916	60,036	0	0	57,060
TAXES OTHER THAN INCOME	125,727	125,727	64,512	31,028	0	0	30,187
INCOME TAXES	193,644	193,644	97,719	47,895	0	0	48,030
TOTAL EXPENSES	1,987,529	1,987,529	1,190,162	460,141	0	0	337,226
TOTAL C-O-S	2,380,257	2,380,257	1,388,345	557,277	0	0	434,636
OTHER REVENUES	19,620	19,620	17,160	2,460	0	0	0
REQUIRED MARGIN REVENUE	2,360,637	2,360,637	1,371,185	554,817	0	0	434,636
CURRENT MARGIN REVENUES	1,357,641	1,357,641	876,245	379,730	0	0	101,666
ZERO REVENUE INCREASE PLUG	-1,002,996	-1,002,996	-582,594	-235,733	0	0	-184,670
	1,377,261 -1,022,616						
C-O-S MARGIN REVENUES @ 0%		1,357,641	788,591	319,084	0	0	249,966
REVENUE ABOVE (BELOW) COS		$0	$87,654	$60,646	$0	$0	-$148,300
PERCENTAGE INCREASE (DECREASE) @ 0% INCREASE		0.00%	-10.00%	-15.97%	#DIV/0!	#DIV/0!	145.87%

SCHEDULE 3

Aquila Networks - L&P
TEST YEAR ENDED DECEMBER 31, 2002
CASE NO. GR-2004-0072
COST - OF - SERVICE RESULTS

	CHECK COLUMN	TOTAL	RESIDENTIAL	GENERAL SERVICE	INTERRUPTIBLE	SMALL TRANSPORTATION	LARGE TRANSPORTATION
RATE BASE	$5,747,225	5,747,225	$3,639,278	$1,742,694	$134,069	$0	$231,185
REQUESTED RETURN	8.18%	8.18%	8.18%	8.18%	8.18%	8.18%	8.18%
RETURN ON RATE BASE	470,123	470,123	297,693	142,552	10,967	0	18,911
O & M EXPENSES	1,407,151	1,407,151	942,168	397,326	20,953	0	46,703
DEPRECIATION EXPENSE	276,125	276,125	174,091	82,639	5,296	0	14,098
TAXES OTHER THAN INCOME	132,684	132,684	86,966	38,452	2,334	0	4,933
INCOME TAXES	114,133	114,133	72,272	34,608	2,662	0	4,591
TOTAL EXPENSES	1,930,093	1,930,093	1,275,497	553,025	31,245	0	70,326
TOTAL C-O-S	2,400,216	2,400,216	1,573,190	695,577	42,212	0	89,236
OTHER REVENUES	46,372	46,372	40,153	6,219	0	0	0
REQUIRED MARGIN REVENUE	2,353,844	2,353,844	1,533,037	689,358	42,212	0	89,236
CURRENT MARGIN REVENUES	1,952,526	1,952,526	1,138,259	575,424	0	0	238,843
ZERO REVENUE INCREASE PLUG	-401,318	-401,318	-261,375	-117,532	-7,197	0	-15,214
1,998,898	-417,933						
C-O-S MARGIN REVENUES @ 0%		1,952,526	1,271,663	571,826	35,015	0	74,022
REVENUE ABOVE (BELOW) COS		$0	-$133,404	$3,598	-$35,015	$0	$164,821
PERCENTAGE INCREASE (DECREASE) @ 0% INCREASE		0.00%	11.72%	-0.63%	#DIV/0!	#DIV/0!	-69.01%

SCHEDULE 4

Aquila Networks - MPS N&S
TEST YEAR ENDED DECEMBER 31, 2002
CASE NO. GR-2004-0072
CUSTOMER CHARGE TABLE

	TOTAL	RESIDENTIAL	GENERAL SERVICE	INTERRUPTIBLE	SMALL TRANSPORTATION	LARGE TRANSPORTATION
TOTAL REVENUES TO COLLECT FROM CLASS	$16,173,925	$9,415,871	$3,655,215	$0	$11,634	$3,091,205
AMOUNT TO BE COLLECTED IN CUSTOMER CHARGE:						
DIRECT SERVICE LINE COSTS	$1,950,318	$1,559,722	$354,014	$0	$887	$35,696
DIRECT METER COSTS	$799,385	$470,065	$290,921	$0	$931	$37,468
DIRECT REGULATOR COSTS	$424,057	$249,359	$154,328	$0	$494	$19,876
DIRECT BILLING COSTS	$595,705	$525,741	$69,377	$0	$14	$573
DIRECT METER READING COSTS	$230,284	$202,439	$26,714	$0	$27	$1,103
DIRECT CUSTOMER SERVICE COSTS	$124,756	$109,671	$14,472	$0	$15	$598
DOLLARS TO COLLECT IN CUSTOMER CHARGE	$4,124,505	$3,116,998	$909,826	$0	$2,368	$95,313
REMAINING DOLLARS TO COLLECT IN CUSTOMER CHARGE	$4,124,505	$3,116,998	$909,826	$0	$2,368	$95,313
NO. OF BILLS	504,160	443,200	58,485	0	60	2,415
CUSTOMER CHARGE FROM COS		$7.03	$15.56	#DIV/0!	$39.47	$39.47
CUSTOMER CHARGE (ROUNDED)		$7.00	$15.60	#DIV/0!	$39.50	$39.50
AMOUNT COLLECTED IN C-O-S CUSTOMER CHARGE:	#DIV/0!	$3,102,400	$912,366	#DIV/0!	$2,370	$95,393
TOTAL AMOUNT TO COLLECT IN COMMODITY CHARGE	#DIV/0!	$6,313,471	$2,742,849	#DIV/0!	$9,264	$2,995,812

SCHEDULE 5

AQUILLA NETWORKS, MPS - EASTERN DISTRICT
TEST YEAR ENDED DECEMBER 31, 2002
CASE NO. GR-2004-0072
CUSTOMER CHARGE TABLE

	TOTAL	RESIDENTIAL	GENERAL SERVICE	INTERRUPTIBLE	SMALL TRANSPORTATION	LARGE TRANSPORTATION
TOTAL REVENUES TO COLLECT FROM CLASS	$1,357,841	$788,591	$319,084	$0	$0	$249,966
AMOUNT TO BE COLLECTED IN CUSTOMER CHARGE:						
DIRECT SERVICE LINE COSTS	$154,600	$117,288	$28,922	$0	$0	$8,389
DIRECT METER COSTS	$176,863	$92,044	$61,888	$0	$0	$22,930
DIRECT REGULATOR COSTS	$54,863	$28,547	$19,194	$0	$0	$7,112
DIRECT BILLING COSTS	$152,204	$132,724	$19,028	$0	$0	$452
DIRECT METER READING COSTS	$41,455	$36,257	$5,198	$0	$0	$0
DIRECT CUSTOMER SERVICE COSTS	$6,767	$5,832	$836	$0	$0	$99
DOLLARS TO COLLECT IN CUSTOMER CHARGE	$586,742	$412,692	$135,066	$0	$0	$38,983
REMAINING DOLLARS TO COLLECT IN CUSTOMER CHARGE	$586,742	$412,692	$135,066	$0	$0	$38,983
NO. OF BILLS	49,058	42,277	6,061	0	0	720
CUSTOMER CHARGE FROM COS		$9.76	$22.28	#DIV/0!	#DIV/0!	$54.14
CUSTOMER CHARGE (ROUNDED)		$9.80	$22.30	#DIV/0!	#DIV/0!	$54.10
AMOUNT COLLECTED IN C-O-S CUSTOMER CHARGE:	#DIV/0!	$414,315	$135,160	#DIV/0!	#DIV/0!	$38,952
TOTAL AMOUNT TO COLLECT IN COMMODITY CHARGE	#DIV/0!	$374,276	$183,924	#DIV/0!	#DIV/0!	$211,014

SCHEDULE 6

Aquila Networks - L&P
TEST YEAR ENDED DECEMBER 31, 2002
CASE NO. GR-2004-0072
CUSTOMER CHARGE TABLE

	TOTAL	RESIDENTIAL	GENERAL SERVICE	INTERRUPTIBLE	TRANSPORTATION	TRANSPORTATION
TOTAL REVENUES TO COLLECT FROM CLASS	$1,952,526	$1,271,663	$571,826	$35,015	$0	$74,022
AMOUNT TO BE COLLECTED IN CUSTOMER CHARGE:						
DIRECT SERVICE LINE COSTS	$175,511	$143,496	$29,565	$721	$0	$1,729
DIRECT METER COSTS	$152,627	$84,312	$64,782	$1,039	$0	$2,494
DIRECT REGULATOR COSTS	$80,498	$44,468	$34,167	$548	$0	$1,315
DIRECT BILLING COSTS	$95,039	$82,061	$12,712	$78	$0	$187
DIRECT METER READING COSTS	$42,641	$36,770	$5,696	$175	$0	$0
DIRECT CUSTOMER SERVICE COSTS	$24,816	$21,191	$3,283	$101	$0	$242
DOLLARS TO COLLECT IN CUSTOMER CHARGE	$571,132	$412,298	$150,205	$2,661	$0	$5,967
REMAINING DOLLARS TO COLLECT IN CUSTOMER CHARGE	$571,132	$412,298	$150,205	$2,661	$0	$5,967
NO. OF BILLS	73,888	63,094	9,774	300	0	720
CUSTOMER CHARGE FROM COS		$6.53	$15.37	$8.87	#DIV/0!	$8.29
CUSTOMER CHARGE (ROUNDED)		$6.50	$15.40	$8.90	#DIV/0!	$8.30

SCHEDULE 7