Exhibit No.:	
Issue:	*Depreciation*
Witness:	*Gregory E. Macias*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Direct Testimony*
Case No.:	*HR-2005-0450*
Date Testimony Prepared:	*October 14, 2005*

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

DIRECT TESTIMONY

OF

GREGORY E. MACIAS

AQUILA, INC.
d/b/a AQUILA NETWORKS – L&P

CASE NO. HR-2005-0450

Jefferson City, Missouri
October 2005

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Tariff Filing of Aquila, Inc., to Implement a General Rate Increase for Retail SteamHeat Service Provided to Customers in Its L&P Missouri Service Area.	))))	Case No. HR-2005-0450 Tariff No. YH-2005-1066

AFFIDAVIT OF GREGORY E. MACIAS

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

Gregory E. Macias, being of lawful age, on his oath states: that he has participated in the preparation of the following Direct Testimony in question and answer form, consisting of 11 pages to be presented in the above case; that the answers in the following Direct 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.

Gregory E. Macias

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

Notary

TONI M. CHARLTON
NOTARY SEAL
NOTARY PUBLIC
STATE OF MISSOURI

TONI M. CHARLTON
Notary Public - State of Missouri
My Commission Expires December 28, 2008
Cole County
Commission #04474301

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DIRECT TESTIMONY OF

GREGORY E. MACIAS

AQUILA, INC. d/b/a AQUILA NETWORKS – L&P

CASE NO. HR-2005-0450

DIRECT TESTIMONY

OF

GREGORY E. MACIAS

AQUILA, INC. d/b/a AQUILA NETWORKS – L&P

CASE NO. HR-2005-0450

Q. Please state your name and business address.

A. Gregory E. Macias, P.O. Box 360, Jefferson City, MO 65102.

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

A. I am employed by the Missouri Public Service Commission (PSC or Commission) as a Utility Engineering Specialist II in the Engineering and Management Services Department.

Q. Please describe your educational background.

A. I earned a Bachelor of Science degree in Civil Engineering from the University of Missouri - Columbia.

Q. Please describe your work background.

A. I began working for the Commission in September 1997 as an Engineering Specialist in the Gas Safety Department. In December 2001 I joined the Engineering and Management Services Department in my current position.

Q. Please describe your duties while employed by the Commission.

A. While working in the Gas Safety Department, I conducted safety inspections and incident investigations of natural gas local distribution companies and intrastate pipeline companies. I am currently responsible for depreciation calculations and studies of companies regulated by the Commission.

Q. Have you previously filed testimony before this Commission?

A. Yes. See Schedule 1 for a list of cases in which I have previously filed testimony.

Q. What matters will you address in your testimony?

A. I will address the Commission Staff's (Staff's) recommendation regarding depreciation rates.

Q. What knowledge, skill, experience, training or education do you have in these matters?

A. I have made on-site visits to several Missouri-regulated electric, natural gas, telecommunications, water and sewer companies. I have gained work related experience and training from the Engineering and Management Services Department's engineering staff regarding concepts of depreciation. I have completed the National Association of Regulatory Commissioners (NARUC) Utility Rate School administered by the University of Florida and the NARUC Water Committee. I have also completed the New Mexico State University Basic NARUC Course. I have reviewed prior Commission decisions and portions of the testimony regarding depreciation issues in previous cases. I have toured the major generating facilities of three Missouri-regulated electric companies, including the majority of Aquila's facilities in Missouri.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to recommend depreciation rates for Aquila, Inc.'s (Aquila or Company) Aquila Networks-L&P steam operations (L&P Steam). The Staff's proposal in this case is:

1. The depreciation rates presented in Schedules 2 be effective for L&P Steam on the date of the Commission's order in this case.

2. The amount of the book depreciation reserve be monitored, but not adjusted at this time.

EXECUTIVE SUMMARY

Q. Please summarize the remainder of your testimony.

A. The Staff conducted a depreciation study of Aquila's capital assets and has recommended depreciation rates which, when applied to the plant in service as of June 30, 2005, generated the depreciation expense used in the Staff's revenue requirement program. For L&P Steam, the depreciation rates determined in this study would decrease the currently ordered annual depreciation accrual from approximately $409,000 to approximately $395,000, a difference of approximately $14,000.

The depreciation system used in this study is the straight line method, broad group procedure and whole life technique. The depreciation rates are based on Staff's estimate of average service life and future net salvage for each capital plant account, and are calculated by the following equation:

$$\textit{Depreciation Rate} = (100\% - \textit{Net Salvage}\%) \div \textit{Average Service Life}$$

The Staff's depreciation rates are listed in Schedule 2. The elements of the Staff's depreciation rates are listed in Schedule 3. A comparison of the Staff's recommended depreciation rates to the currently ordered depreciation rates and the Company's proposed depreciation rates is presented in Schedule 4.

Staff also analyzed the accumulated reserve for depreciation by comparing it to a theoretical depreciation reserve that was calculated using the mortality characteristics determined in the depreciation study. This comparison is presented in Schedule 3.

DEPRECIATION ISSUES

Q. When were depreciation rates for the Company last adopted by a Commission Order?

A. Depreciation rates were last adopted for the Company by a Commission order approving a Stipulation And Agreement in Case No. HR-2004-0024 effective April 22, 2004.

Q. Has there been any change in the Staff's approach to determining depreciation rates since Aquila's last rate increase proceeding?

A. Yes. The Staff's recommendation in this case is in conformance with the guidelines set forth in the Report and Order in Case No. ER-2004-0570.

Q. Did you conduct and complete a depreciation study of Aquila's capital plant accounts?

A. Yes. The recommended depreciation rates are presented in Schedule 2. The depreciation rates determined in this study would decrease the currently ordered annual depreciation accrual by approximately $14,000 for L&P Steam, based on June 30, 2005 plant in service balances.

Q. Did you perform an analysis of the depreciation reserve?

A. Yes, as part of the depreciation study, I calculated a theoretical depreciation reserve for comparison to the booked depreciation reserve. This comparison is presented in Schedule 3. When compared to the theoretical depreciation reserve, the booked depreciation reserve is over-accrued by approximately $2.8 million for L&P as of December 31, 2004.

Q. Has your depreciation study been subjected to an engineering peer review?

A. Yes. My workpapers have been reviewed by the Engineering and Management Services Department's Regulatory Engineer II, Guy C. Gilbert, P.E., R.G.

DEPRECIATION STUDY

Q. What is the definition of depreciation?

A. Depreciation is the loss, not restored by current maintenance, which is due to all factors causing ultimate retirement of the property. These factors include wear and tear, decay, inadequacy, obsolescence, changes in the art, and requirements of public authorities.

The purpose of depreciation in a regulatory setting is to recover the cost of capital assets allocated rationally over the assets' useful lives (return of equity). Annual depreciation expense, when distributed over the life of each asset, yields the recovery of all costs determined to be associated with the utility's assets.

Q. Please describe the depreciation study that you conducted in this case.

A. I performed a broad group-average life depreciation study, where all units of plant within a particular depreciation category are considered to be one group when analyzing mortality data to determine average service lives. The average service life (ASL), expressed in years, is the expected period of useful service of all units of the group, or account, regardless of placement date.

Q. What steps are involved in life estimation?

A. Determining an account's average service life begins with four primary steps. The first step is to collect and review the historical placement and retirement plant data. The mortality data is checked for reasonableness and to ensure that sufficient data exists to perform a statistical analysis. Step two is touring utility facilities to gain familiarity with them and to discuss with operations personnel, engineers, accountants and others, current trends and developments that may influence the useful life of plant in service. Step three is to perform a statistical analysis of the retirement experience of the utility plant accounts. The fourth primary

step in the process of determining average service life is applying experience and informed judgment to the results of the actuarial analysis to confirm that the results are reasonable for the type of plant in question.

Q. If the data is insufficient or the results of the statistical analysis are unreasonable, how does Staff make life estimations?

A. Staff uses informed judgment and recognition of current developments to develop service life estimations where the data is insufficient or the results of the analysis are unreliable.

Q. What method of analysis did you use to evaluate the retirement experience of the Company's plant accounts?

A. I used the retirement rate method of analysis. The retirement rate method analyzes historical plant data by calculating the ratio of retirements to exposures by age, then solving for the percent surviving by age, to develop a survivor curve for an account. The required data are plant additions in dollars by year, or vintage, and retirements from each vintage in dollars by year. The exposures at a given age are the dollars remaining from the various vintages that have lived to that age. The retirement ratio is the dollars retired during an age interval divided by the exposures at the beginning of that interval. The survivor ratio is then calculated by subtracting the retirement ratio from one. Multiplying each successive survivor ratio by the percent surviving of the previous age will generate a survivor curve. This original survivor curve can then be smoothed or fitted to an empirically developed statistical model known as the Iowa type curves.

Q. What are the Iowa type curves?

A. The Iowa type curves are widely accepted models of the life characteristics of utility property. The system of Iowa curves is a family of curve shapes empirically derived from

analyses of mortality data of 176 types of utility and industrial property. The curves were developed at the Iowa Engineering Experiment Station at what is presently known as Iowa State University. The Iowa curves were first published in 1935 and reconfirmed in 1980.

Q. How do the Iowa type curves help determine an accounts average service life?

A. Smoothing the original survivor curve by fitting it to an Iowa type curve eliminates irregularities and extrapolates stub curves to zero percent. The original survivor curve is mathematically and visually matched with various Iowa type curves to determine which has the most appropriate fit. The average service life of an account's original survivor curve is estimated as the area under the selected Iowa type curve.

Q. What can cause an account's average service life to change over time?

A. Current developments such as technological changes, environmental regulations, regulatory requirements or accounting changes can all affect the average service life of property in an account. Different vintages of plant being manufactured from different materials, changes in installation practice or the development of a life extending maintenance procedure are some examples.

Q. Are there any other elements factored into the depreciation rate calculation?

A. Yes. Consideration was given to the future net salvage that property in an account may experience.

Q. What is net salvage?

A. Net salvage is gross salvage, or recovered marketable value of retired plant, less cost of removal, or the cost associated with the retirement from service and disposition of plant. Negative net salvage occurs when the cost of removal exceeds gross salvage; this is sometimes referred to as net salvage expense or net cost of removal.

Q. How was net salvage calculated in your depreciation study?

A. To implement Commission policy, net salvage rates were developed by dividing the experienced net salvage by the original cost of plant retired to calculate the net salvage rate realized by the Company. This realized net salvage rate was used as an estimator for future net salvage requirements for most accounts. For certain accounts where this ratio yielded an unreasonable result, I accepted the Company's estimate of future net salvage.

For the production accounts, where terminal net salvage is generally not collected until final retirement of a unit is eminent, I accepted the Company's estimate of future interim retirement net salvage amounts and resulting rates. These estimates were accepted because they are not excessive.

Q. How did you calculate depreciation rates for Aquila's various plant accounts?

A. Using the straight line method, broad group procedure, and whole life technique, the annual depreciation accrual rate for an account was calculated as follows:

$$\textit{Depreciation Rate} = (100\% - \textit{Net Salvage}\%) \div \textit{Average Service Life}$$

where, generally:

$$\textit{Net Salvage}\% = (\textit{Gross Salvage} - \textit{Cost of Removal}) \div \textit{Original Cost of Plant Retired}$$

This depreciation rate is designed to recover the original cost of an account's assets, less any estimated scrap value, plus an estimate of any cost of removal, over the useful average service life of the assets.

DEPRECIATION STUDY – L&P STEAM

Q. Briefly describe the Company's L&P Steam capital plant accounts.

A. In addition to the industrial steam accounts, L&P Steam has a Common category for plant shared with another operating division, i.e. electric, natural gas and steam services, and a Corporate category which designates L&P Steam's allocation of Aquila's corporate assets.

Q. How did Staff determine the appropriate depreciation rates for L&P Steam's capital plant accounts?

A. With the exception of the industrial steam distribution accounts, the Staff utilized the depreciation study conducted for the Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P rate case, Case No. ER-2005-0436. A detailed description of the depreciation rate determinations can be found in my Direct Testimony for that case.

For the industrial steam distribution accounts, account numbers 375.009, 376.009, 379.009, 380.009 and 381.009, Staff made average service life estimates by using judgment and statistical life analysis of these accounts' mortality data.

Q. How did Staff make a net salvage estimate for L&P Steam's industrial steam distribution accounts?

A. The Staff accepted the Company's estimate of future interim retirement net salvage amounts and resulting net salvage rates.

Q. What are the results of Staff's depreciation study?

A. The depreciation rates determined in this study would decrease the currently ordered annual depreciation accrual by approximately $14,000 based on June 30, 2005 plant in service balances.

Q. Please summarize Staff's recommendation for depreciation rates for the Company's plant accounts.

A. Staff's recommended average service lives, net salvage rates, and depreciation rates are summarized in Schedule 3. A comparison of Staff's recommendation to the existing ordered depreciation rates and the Company's proposal is presented in Schedule 4.

DEPRECIATION RESERVE ANALYSIS

Q. Did Staff analyze the Company's accumulated provision for depreciation?

A. Yes. The revised estimate of average service life and selected Iowa type curve are used to compute the calculated accumulated depreciation, or theoretical reserve. The theoretical reserve is the amount that would be in the accumulated provision for depreciation, or book depreciation reserve, if the depreciation rate corresponding to the revised estimates had been applied from the original placement of plant to the date of the study. The theoretical reserve can be thought of as the difference between the original cost of plant currently in service and the summation of annual depreciation expense that is to be collected from the study date until the date of final retirement of the account.

Q. What are the results of your analysis of the book depreciation reserve?

A. My analysis indicates that the booked depreciation reserve is over-accrued by approximately $2.8 million as of December 31, 2004. A comparison of the theoretical reserve to the book reserve is presented in Schedule 3.

Q. What caused the booked depreciation reserve to be over-accrued?

A. Current expectations varying from previous study estimates of average service life, retirement dispersion pattern and net salvage combined with actual plant experience created the theoretical over-accrual of the booked depreciation reserve.

Q. What is Staff's criteria for an adjustment of an over accrual of depreciation reserve?

A. The need for, magnitude of and timing of a reserve imbalance adjustment should be based on consideration of several factors including the characteristics of the account, the causes for the difference, the magnitude of the imbalance, and the year-to-year volatility of the accumulated provision for depreciation.

Q. What is your recommendation for adjusting the depreciation reserve over-accrual?

A. I do not propose an adjustment of the depreciation reserve at this time. I believe that an adjustment would not be appropriate because of the recent change in the calculation of Aquila's depreciation rates. The depreciation rates previously ordered for L&P Steam did not have a component for future net salvage. The rates recommended in this case do. I believe that the depreciation reserve should be allowed to "settle in" for a period of time during this transitional period. The depreciation reserve imbalance should be noted and monitored in future depreciation studies

RECOMMENDATION

Q. Please summarize Staff's proposal regarding depreciation in this case.

A. I recommend that the Commission order the depreciation rates proposed in Schedule 2 for L&P Steam. Additionally, the accumulated reserve for depreciation over-accrual is noted and should be monitored in future depreciation studies.

Q. Does this conclude your direct testimony?

A. Yes.

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Aquila Networks, Inc.

Schedule 1. Case Proceeding Participation
Staff Witness Gregory E. Macias

Company Name	Case Number	Testimony Filed	Issue(s)
Missouri American Water Company	WR-2003-0500	Direct, Rebuttal, Surrebuttal	Depreciation
Osage Water Company	ST-2003-0562 WT-2003-0563	Direct	Depreciation
Fidelity Telephone Company	IR-2004-272	Direct	Depreciation
The Empire District Electric Company	ER-2004-0570	Direct, Rebuttal, Surrebuttal	Depreciation

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AQUILA NETWORKS - L&P Steam
SCHEDULE 2. Depreciation Rate Recommendation

Account Number	Description	Depreciation Rate
	STEAM PRODUCTION PLANT	
	LAKE ROAD	
310.000	Land and Land Rights	
311.000	Structures and Improvements	1.90%
311.050	Structures and Improvements-Lease	
312.000	Boiler Plant Equipment	2.16%
312.200	Boiler Plant - Pollution	2.16%
314.110	Turbogenerator Units	2.33%
315.110	Accessory Electric Equipment	2.37%
316.110	Miscellaneous Power Plant Equipment	2.90%
	INDUSTRIAL STEAM PLANT	
310.000	Land and Land Rights	
311.009	Structures and Improvements	2.36%
312.009	Boiler Plant Equipment	2.60%
315.009	Accessory Electric Equipment	2.59%
375.009	Industrial Steam Distribution S & I	3.30%
376.009	Mains	2.45%
379.009	Measuring and Regulating Station Eq.	2.38%
380.009	Services	2.62%
381.009	Meters	4.77%
	GENERAL PLANT	
391.001	Office Furniture and Equipment-Lake Rd	4.17%
391.003	Computer Hardware - Lake Rd	12.50%
391.004	Computer Software - Lake Rd	11.11%
391.011	SJ Off-Machines 1987 - Lake Rd	4.17%
392.003	Transportation Equipment-light trucks LR	11.25%
392.004	Transportation Equipment-med trucks LR	11.25%
392.005	Transportation Equipment-heavy trucks LR	11.25%
392.006	Transportation Equipment-trailers LR	11.25%
393.000	Stores Equipment - Lake Rd	3.70%
394.000	Tools, Shop and Garage Equipment - Lake Rd	3.68%
395.000	Laboratory Equipment - Lake Rd	3.43%
396.002	Power Operated Equipment-long life LR	4.45%

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AQUILA NETWORKS - L&P Steam
SCHEDULE 2. Depreciation Rate Recommendation

Account Number	Description	Depreciation Rate
397.000	Communication Equipment - Lake Rd	3.70%
398.001	Miscellaneous Equipment - Lake Rd	3.71%
	COMMON UTILITY	
389.000	Land and Land Rights	
390.001	Structures and Improvements-Own	2.51%
391.001	Office Furniture and Equipment	4.17%
391.003	Computer Hardware	12.50%
391.004	Computer Software	11.11%
391.011	Office Machines	4.17%
392.003	Transportation Equipment-light trucks	11.25%
392.004	Transportation Equipment-med trucks	11.25%
392.005	Transportation Equipment-heavy trucks	11.25%
392.006	Transportation Equipment-trailers	11.25%
393.000	Stores Equipment	3.70%
394.000	Tools, Shop and Garage Equipment	3.68%
396.002	Power Operated Equipment-long life	4.45%
397.000	Communication Equipment	3.70%
398.000	Miscellaneous Equipment	3.71%
	CORPORATE (SHARE OF UCU)	
389.001	Land and Land Rights	
390.001	Structures and Improvements-Own	2.22%
390.051	Structures and Improvements-Lease	
391.001	Office Furniture and Equipment	4.17%
391.003	Computer Hardware	12.50%
391.004	Computer Software	11.11%
391.005	Office Furniture & Equip Computer Dev	11.11%
394.000	Tools, Shop and Garage Equipment	3.57%
395.000	Laboratory Equipment	3.57%
397.000	Communication Equipment	3.70%
398.000	Miscellaneous Equipment	4.17%

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AQUILA NETWORKS - L&P Steam
SCHEDULE 3. Depreciation Rate Determination, Corresponding Annual Accrual and Reserve for Depreciation

Account Number	Description	Original Cost 6/30/2005	Staff Proposed ASL (Years)	Iowa Curve	Average Net Salvage	Depreciation Rate	Annual Accrual	Theoretical Reserve 12/31/2004	Accumulated Reserve 12/31/2004*
(1)	(2)	(3)	(4)	(5)	(6)	(7)=[100%-(6)]/(4)	(8)=(7)*(3)	(9)	(10)
	STEAM PRODUCTION PLANT								
	LAKE ROAD								
310.000	Land and Land Rights	3,865							
311.000	Structures and Improvements	1,170,271	54	R4	-2.7%	1.90%	22,235	385,418	478,353
311.050	Structures and Improvements-Lease	1,133						-	-
312.000	Boiler Plant Equipment	7,872,613	48	R1.5	-3.7%	2.16%	170,048	2,174,330	3,835,046
312.200	Boiler Plant - Pollution	1,935,066	48	R1.5	-3.7%	2.16%	41,797	-	834,411
314.110	Turbogenerator Units	218,698	44	R2.5	-2.6%	2.33%	5,096	82,805	2,361
315.110	Accessory Electric Equipment	311,831	43	S0.5	-1.8%	2.37%	7,390	125,765	253,957
316.110	Miscellaneous Power Plant Equipment	63,549	40	R3	-15.8%	2.90%	1,843	28,313	48,417
	Total Lake Road	11,577,026					248,409	2,796,632	5,452,545
	INDUSTRIAL STEAM PLANT								
310.000	Land and Land Rights	11,450							
311.009	Structures and Improvements	32,160	54	R4	-27.6%	2.36%	759	37,798	(11,488)
312.009	Boiler Plant Equipment	172,134	48	R1.5	-24.9%	2.60%	4,475	(3,554)	55,058
315.009	Accessory Electric Equipment	269,117	43	S0.5	-11.2%	2.59%	6,970	98,531	151,103
375.009	Industrial Steam Distribution S & I	107,094	32	L4	-5.6%	3.30%	3,534	49,815	28,686
376.009	Mains	1,481,523	42	R1.5	-3.1%	2.45%	36,297	620,628	801,668
379.009	Measuring and Regulating Station Eq.	638,475	44	R3	-4.7%	2.38%	15,196	221,283	311,024
380.009	Services	100,842	40	S2.5	-4.9%	2.62%	2,642	49,469	80,064
381.009	Meters	346,166	21	R2	-0.1%	4.77%	16,512	187,170	151,904
	Total	3,158,961					86,385	1,261,140	1,568,019
	TOTAL STEAM PLANT	14,735,987					334,794	4,057,772	7,020,564

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AQUILA NETWORKS - L&P Steam
SCHEDULE 3. Depreciation Rate Determination, Corresponding Annual Accrual and Reserve for Depreciation

Account Number	Description	Original Cost 6/30/2005	Staff Proposed ASL (Years)	Iowa Curve	Average Net Salvage	Depreciation Rate	Annual Accrual	Theoretical Reserve 12/31/2004	Accumulated Reserve 12/31/2004*
	GENERAL PLANT								
391.001	Office Furniture and Equipment-Lake Rd	41,868	24	L4	0.0%	4.17%	1,746	17,730	14,160
391.003	Computer Hardware - Lake Rd	34,288	8	R0.5	0.0%	12.50%	4,286	11,371	6,621
391.004	Computer Software - Lake Rd	11,000	9	S1.5	0.0%	11.11%	1,222	6,401	6,853
391.011	SJ Off-Machines 1987 - Lake Rd	593	24	L4	0.0%	4.17%	25	-	151
392.003	Transportation Equipment-light trucks LR	-	8	S6	10.0%	11.25%	-	39,634	10,061
392.004	Transportation Equipment-med trucks LR	1,807	8	S6	10.0%	11.25%	203	-	2,030
392.005	Transportation Equipment-heavy trucks LR	13,926	8	S6	10.0%	11.25%	1,567	-	13,926
392.006	Transportation Equipment-trailers LR	185	8	S6	10.0%	11.25%	21	-	-
393.000	Stores Equipment - Lake Rd	84	27	L1.5	0.0%	3.70%	3	18	23
394.000	Tools, Shop and Garage Equipment - LR	43,360	28	L0	-3.0%	3.68%	1,596	9,269	27,405
395.000	Laboratory Equipment - Lake Rd	35,689	28	R2.5	4.0%	3.43%	1,224	14,315	-
396.002	Power Operated Equipment-long life LR	98,723	22	R4	2.0%	4.45%	4,393	44,856	32,580
397.000	Communication Equipment - Lake Rd	-	27	S2	0.0%	3.70%	-	-	-
398.001	Miscellaneous Equipment - Lake Rd	1,016	24	L3	11.0%	3.71%	38	458	-
	TOTAL GENERAL PLANT	282,539					16,324	144,054	113,810
	COMMON UTILITY								
389.000	Land and Land Rights	3,754							
390.001	Structures and Improvements-Own	48,229	45	R1.5	-13.0%	2.51%	1,211	22,870	-
391.001	Office Furniture and Equipment	440	24	L4	0.0%	4.17%	18	4,011	208
391.003	Computer Hardware	4,918	8	R0.5	0.0%	12.50%	615	1,898	1,726
391.004	Computer Software	91	9	S1.5	0.0%	11.11%	10	70	4,548
391.011	Office Machines	1,199	24	L4	0.0%	4.17%	50	-	-
392.003	Transportation Equipment-light trucks	-	8	S6	10.0%	11.25%	-	-	-

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AQUILA NETWORKS - L&P Steam
SCHEDULE 3. Depreciation Rate Determination, Corresponding Annual Accrual and Reserve for Depreciation

Account Number	Description	Original Cost 6/30/2005	Staff Proposed ASL (Years)	Iowa Curve	Average Net Salvage	Depreciation Rate	Annual Accrual	Theoretical Reserve 12/31/2004	Accumulated Reserve 12/31/2004*
392.004	Transportation Equipment-med trucks	2,002	8	S6	10.0%	11.25%	225	-	-
392.005	Transportation Equipment-heavy trucks	-	8	S6	10.0%	11.25%	-	-	-
392.006	Transportation Equipment-trailers	-	8	S6	10.0%	11.25%	-	-	-
393.000	Stores Equipment	163	27	L1.5	0.0%	3.70%	6	58	-
394.000	Tools, Shop and Garage Equipment	2,243	28	L0	-3.0%	3.68%	83	6,628	-
396.002	Power Operated Equipment-long life	-	22	R4	2.0%	4.45%	-	-	-
397.000	Communication Equipment	12,045	27	S2	0.0%	3.70%	446	4,734	1,152
398.000	Miscellaneous Equipment	538	24	L3	11.0%	3.71%	20	258	-
	TOTAL COMMON UTILITY	75,622					2,684	40,526	7,634
	CORPORATE (SHARE OF UCU)								
389.001	Land and Land Rights	1,805							
390.001	Structures and Improvements-Own	174,273	45	R1.5	0.0%	2.22%	3,869	20,962	17,631
390.051	Structures and Improvements-Lease	17,260					-	-	12,722
391.001	Office Furniture and Equipment	40,055	24	L4	0.0%	4.17%	1,670	8,318	7,802
391.003	Computer Hardware	42,008	8	R0.5	0.0%	12.50%	5,251	13,408	279
391.004	Computer Software	198,744	9	S1.5	0.0%	11.11%	22,080	91,308	45,700
391.005	Office Furniture & Equip Computer Dev	65,114	9		0.0%	11.11%	7,234	41,470	20,801
394.000	Tools, Shop and Garage Equipment	1,018	28	L0	0.0%	3.57%	36	234	837
395.000	Laboratory Equipment	198	28	R2.5	0.0%	3.57%	7	73	33
397.000	Communication Equipment	31,483	27	S2	0.0%	3.70%	1,165	6,283	6,123
398.000	Miscellaneous Equipment	1,657	24	L3	0.0%	4.17%	69	452	1,037
	TOTAL CORPORATE	573,615					41,381	182,507	112,965
	GRAND TOTAL	15,667,763					395,184	4,424,859	7,254,973
	DEPRECIATION RESERVE OVER (UNDER) ACCRUAL								2,830,114

*Coroprate accumulated reserve as of 6/30/2005.

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AQUILA NETWORKS - L&P Steam
SCHEDULE 4. Depreciation Position Comparison

Account Number	Description	Original Cost 6/30/2005	Staff Proposal ASL (Years)	Staff Proposal Iowa Curve	Staff Proposal Net Salvage	Staff Proposal Depreciation Rate	Staff Proposal Annual Accrual	Existing Ordered ASL (Years)	Existing Ordered Iowa Curve	Existing Ordered Net Salvage	Existing Ordered Depreciation Rate	Existing Ordered Annual Accrual
	STEAM PRODUCTION PLANT											
	LAKE ROAD											
310.000	Land and Land Rights	3,865										
311.000	Structures and Improvements	1,170,271	54	R4	-2.7%	1.90%	22,235	45	R0.5	0%	2.22%	25,980
311.050	Structures and Improvements-Lease	1,133										-
312.000	Boiler Plant Equipment	7,872,613	48	R1.5	-3.7%	2.16%	170,048	45	R2	0%	2.22%	174,772
312.200	Boiler Plant - Pollution	1,935,066	48	R1.5	-3.7%	2.16%	41,797	45	R2	0%	2.22%	42,958
314.110	Turbogenerator Units	218,698	44	R2.5	-2.6%	2.33%	5,096	45	R4	0%	2.22%	4,855
315.110	Accessory Electric Equipment	311,831	43	S0.5	-1.8%	2.37%	7,390	38	R1.5	0%	2.63%	8,201
316.110	Miscellaneous Power Plant Equipment	63,549	40	R3	-15.8%	2.90%	1,843	35	R5	0%	2.86%	1,818
	Total Lake Road	11,577,026					248,409					258,584
	INDUSTRIAL STEAM PLANT											
310.000	Land and Land Rights	11,450										
311.009	Structures and Improvements	32,160	54	R4	-27.6%	2.36%	759	45	R0.5	0%	2.22%	714
312.009	Boiler Plant Equipment	172,134	48	R1.5	-24.9%	2.60%	4,475	45	R2	0%	2.22%	3,821
315.009	Accessory Electric Equipment	269,117	43	S0.5	-11.2%	2.59%	6,970	38	R1.5	0%	2.63%	7,078
375.009	Industrial Steam Distribution S & I	107,094	32	L4	-5.6%	3.30%	3,534	45	R0.5	0%	2.22%	2,377
376.009	Mains	1,481,523	42	R1.5	-3.1%	2.45%	36,297	44	R2	0%	2.27%	33,631
379.009	Measuring and Regulating Station Eq.	638,475	44	R3	-4.7%	2.38%	15,196	44	R3	0%	2.27%	14,493
380.009	Services	100,842	40	S2.5	-4.9%	2.62%	2,642	44	S5	0%	2.27%	2,289
381.009	Meters	346,166	21	R2	-0.1%	4.77%	16,512	25	L4	0%	4.00%	13,847
	Total	3,158,961					86,385					78,250
	TOTAL STEAM PLANT	14,735,987					334,794					336,834
	GENERAL PLANT											
391.001	Office Furniture and Equipment-Lake Rd	41,868	24	L4	0.0%	4.17%	1,746	22	L4	0%	4.55%	1,905
391.003	Computer Hardware - Lake Rd	34,288	8	R0.5	0.0%	12.50%	4,286	7	S2	0%	14.29%	4,900
391.004	Computer Software - Lake Rd	11,000	9	S1.5	0.0%	11.11%	1,222	7	S2	0%	14.29%	1,572
391.011	SJ Off-Machines 1987 - Lake Rd	593	24	L4	0.0%	4.17%	25	22	L4	0%	4.55%	27

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AQUILA NETWORKS - L&P Steam
SCHEDULE 4. Depreciation Position Comparison

			Staff Proposal					Existing Ordered				
Account Number	Description	Original Cost 6/30/2005	ASL (Years)	Iowa Curve	Net Salvage	Depreciation Rate	Annual Accrual	ASL (Years)	Iowa Curve	Net Salvage	Depreciation Rate	Annual Accrual
392.003	Transportation Equipment-light trucks LR		8	S6	10.0%	11.25%	-	12	S5	0%	8.33%	-
392.004	Transportation Equipment-med trucks LR	1,807	8	S6	10.0%	11.25%	203	12	S5	0%	8.33%	151
392.005	Transportation Equipment-heavy trucks LR	13,926	8	S6	10.0%	11.25%	1,567	12	S5	0%	8.33%	1,160
392.006	Transportation Equipment-trailers LR	185	8	S6	10.0%	11.25%	21	12	S5	0%	8.33%	15
393.000	Stores Equipment - Lake Rd	84	27	L1.5	0.0%	3.70%	3	27	L1	0%	3.70%	3
394.000	Tools, Shop and Garage Equipment - Lake	43,360	28	L0	-3.0%	3.68%	1,596	27	L0	0%	3.70%	1,604
395.000	Laboratory Equipment - Lake Rd	35,689	28	R2.5	4.0%	3.43%	1,224	29	R2.5	0%	3.45%	1,231
396.002	Power Operated Equipment-long life LR	98,723	22	R4	2.0%	4.45%	4,393	16	S6	0%	6.25%	6,170
397.000	Communication Equipment - Lake Rd	-	27	S2	0.0%	3.70%	-	29	S2	0%	3.45%	-
398.001	Miscellaneous Equipment - Lake Rd	1,016	24	L3	11.0%	3.71%	38	23	L4	0%	4.35%	44
	TOTAL GENERAL PLANT	282,539					16,324					18,782
	COMMON UTILITY											
389.000	Land and Land Rights	3,754										
390.001	Structures and Improvements-Own	48,229	45	R1.5	-13.0%	2.51%	1,211	45	R1.5	0%	2.22%	1,071
391.001	Office Furniture and Equipment	440	24	L4	0.0%	4.17%	18	22	L4	0%	4.55%	20
391.003	Computer Hardware	4,918	8	R0.5	0.0%	12.50%	615	7	S2	0%	14.29%	703
391.004	Computer Software	91	9	S1.5	0.0%	11.11%	10	7	S2	0%	14.29%	13
391.011	Office Machines	1,199	24	L4	0.0%	4.17%	50	22	L4	0%	4.55%	55
392.003	Transportation Equipment-light trucks	-	8	S6	10.0%	11.25%	-	12	S5	0%	8.33%	-
392.004	Transportation Equipment-med trucks	2,002	8	S6	10.0%	11.25%	225	12	S5	0%	8.33%	167
392.005	Transportation Equipment-heavy trucks	-	8	S6	10.0%	11.25%	-	12	S5	0%	8.33%	-
392.006	Transportation Equipment-trailers	-	8	S6	10.0%	11.25%	-	12	S5	0%	8.33%	-
393.000	Stores Equipment	163	27	L1.5	0.0%	3.70%	6	27	L1	0%	3.70%	6
394.000	Tools, Shop and Garage Equipment	2,243	28	L0	-3.0%	3.68%	83	27	L0	0%	3.70%	83
396.002	Power Operated Equipment-long life	-	22	R4	2.0%	4.45%	-	16	S6	0%	6.25%	-
397.000	Communication Equipment	12,045	27	S2	0.0%	3.70%	446	29	S2	0%	3.45%	416
398.000	Miscellaneous Equipment	538	24	L3	11.0%	3.71%	20	23	L4	0%	4.35%	23
	TOTAL COMMON UTILITY	75,622					2,684					2,557

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AQUILA NETWORKS - L&P Steam
SCHEDULE 4. Depreciation Position Comparison

Account Number	Description	Original Cost 6/30/2005	Staff Proposal ASL (Years)	Staff Proposal Iowa Curve	Staff Proposal Net Salvage	Staff Proposal Depreciation Rate	Staff Proposal Annual Accrual	Existing Ordered ASL (Years)	Existing Ordered Iowa Curve	Existing Ordered Net Salvage	Existing Ordered Depreciation Rate	Existing Ordered Annual Accrual
	CORPORATE (SHARE OF UCU)											
389.001	Land and Land Rights	1,805										
390.001	Structures and Improvements-Own	174,273	45	R1.5	0.0%	2.22%	3,869	45	R1.5	0%	2.22%	3,869
390.051	Structures and Improvements-Lease	17,260					-					
391.001	Office Furniture and Equipment	40,055	24	L4	0.0%	4.17%	1,670	22	L4	0%	4.55%	1,823
391.003	Computer Hardware	42,008	8	R0.5	0.0%	12.50%	5,251	7	S2	0%	14.29%	6,003
391.004	Computer Software	198,744	9	S1.5	0.0%	11.11%	22,080	7	S2	0%	14.29%	28,401
391.005	Office Furniture & Equip Computer Dev	65,114	9		0.0%	11.11%	7,234	7	S2	0%	14.29%	9,305
394.000	Tools, Shop and Garage Equipment	1,018	28	L0	0.0%	3.57%	36	27	L0	0%	3.70%	38
395.000	Laboratory Equipment	198	28	R2.5	0.0%	3.57%	7	29	R2.5	0%	3.45%	7
397.000	Communication Equipment	31,483	27	S2	0.0%	3.70%	1,165	29	S2	0%	3.45%	1,086
398.000	Miscellaneous Equipment	1,657	24	L3	0.0%	4.17%	69	23	L4	0%	4.35%	72
	TOTAL CORPORATE	573,615					41,381					50,604
	GRAND TOTAL	15,667,763					395,183					408,777
	Total Depreciation adjustment						(13,594)					-

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AQUILA NETWORKS - L&P Steam
SCHEDULE 4. Depreciation Position Comparison

			Staff Proposal					Company Proposal					
Account Number	Description	Original Cost 6/30/2005	ASL (Years)	Iowa Curve	Net Salvage	Depreciation Rate	Annual Accrual	ASL (Years)	Iowa Curve	Net Salvage	Amorti-zation	Remain. Life Dep. Rate	Annual Accrual
	STEAM PRODUCTION PLANT												
	LAKE ROAD												
310.000	Land and Land Rights	3,865											
311.000	Structures and Improvements	1,170,271	54	R4	-2.7%	1.90%	22,235	20.82	200SC	-2.7%	-0.61%	4.32%	50,556
311.050	Structures and Improvements-Lease	1,133											-
312.000	Boiler Plant Equipment	7,872,613	48	R1.5	-3.7%	2.16%	170,048	20.26	200SC	-3.7%	-0.59%	4.53%	356,629
312.200	Boiler Plant - Pollution	1,935,066	48	R1.5	-3.7%	2.16%	41,797	20.26	200SC	-3.7%	-0.59%	4.53%	87,658
314.110	Turbogenerator Units	218,698	44	R2.5	-2.6%	2.33%	5,096	24.16	200SC	-2.6%	-0.71%	3.54%	7,742
315.110	Accessory Electric Equipment	311,831	43	S0.5	-1.8%	2.37%	7,390	23.29	200SC	-1.8%	-0.69%	3.68%	11,475
316.110	Miscellaneous Power Plant Equipment	63,549	40	R3	-15.8%	2.90%	1,843	19.26	200SC	-15.8%	-0.47%	5.54%	3,521
	Total Lake Road	11,577,026					248,409						517,581
	INDUSTRIAL STEAM PLANT												
310.000	Land and Land Rights	11,450											
311.009	Structures and Improvements	32,160	54	R4	-27.6%	2.36%	759	32.05	200SC	-27.6%	2.17%	6.15%	1,978
312.009	Boiler Plant Equipment	172,134	48	R1.5	-24.9%	2.60%	4,475	33.09	200SC	-24.9%	2.22%	5.99%	10,311
315.009	Accessory Electric Equipment	269,117	43	S0.5	-11.2%	2.59%	6,970	23.46	200SC	-11.2%	1.91%	6.65%	17,896
375.009	Industrial Steam Distribution S & I	107,094	32	L4	-5.6%	3.30%	3,534	22.48	100SC	-5.6%	1.58%	6.28%	6,726
376.009	Mains	1,481,523	42	R1.5	-3.1%	2.45%	36,297	26.72	100SC	-3.1%	2.00%	5.86%	86,817
379.009	Measuring and Regulating Station Eq.	638,475	44	R3	-4.7%	2.38%	15,196	21.49	100SC	-4.7%	1.68%	6.55%	41,820
380.009	Services	100,842	40	S2.5	-4.9%	2.62%	2,642	25.79	100SC	-4.9%	1.93%	6.00%	6,051
381.009	Meters	346,166	21	R2	-0.1%	4.77%	16,512	19.19	100SC	-0.1%	1.42%	6.64%	22,985
	Total	3,158,961					86,385						194,584
	TOTAL STEAM PLANT	14,735,987					334,794						712,165
	GENERAL PLANT												
391.001	Office Furniture and Equipment-Lake Rd	41,868	24	L4	0.0%	4.17%	1,746	18.64	L0		-0.18%	5.18%	2,169
391.003	Computer Hardware - Lake Rd	34,288	8	R0.5	0.0%	12.50%	4,286	12.82	SC		-0.43%	7.37%	2,527
391.004	Computer Software - Lake Rd	11,000	9	S1.5	0.0%	11.11%	1,222	12.37	SC		-0.24%	7.84%	862
391.011	SJ Off-Machines 1987 - Lake Rd	593	24	L4	0.0%	4.17%	25	18.64			-18.00%	-12.64%	(75)

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AQUILA NETWORKS - L&P Steam
SCHEDULE 4. Depreciation Position Comparison

			Staff Proposal					Company Proposal					
Account Number	Description	Original Cost 6/30/2005	ASL (Years)	Iowa Curve	Net Salvage	Depreciation Rate	Annual Accrual	ASL (Years)	Iowa Curve	Net Salvage	Amorti-zation	Remain. Life Dep. Rate	Annual Accrual
392.003	Transportation Equipment-light trucks LR		8	S6	10.0%	11.25%	-	15.04	L1.5	19.4%	-1.28%	4.08%	-
392.004	Transportation Equipment-med trucks LR	1,807	8	S6	10.0%	11.25%	203	15.04	L1.5	19.4%	-1.28%	4.08%	74
392.005	Transportation Equipment-heavy trucks LR	13,926	8	S6	10.0%	11.25%	1,567	15.04	L1.5	19.4%	-1.28%	4.08%	568
392.006	Transportation Equipment-trailers LR	185	8	S6	10.0%	11.25%	21	15.04	L1.5	19.4%	-1.28%	4.08%	8
393.000	Stores Equipment - Lake Rd	84	27	L1.5	0.0%	3.70%	3	30.00	S1.5		-0.05%	3.28%	3
394.000	Tools, Shop and Garage Equipment - Lake	43,360	28	L0	-3.0%	3.68%	1,596	25.21	L2		-0.22%	3.75%	1,626
395.000	Laboratory Equipment - Lake Rd	35,689	28	R2.5	4.0%	3.43%	1,224	25.74	S1		-0.34%	3.55%	1,267
396.002	Power Operated Equipment-long life LR	98,723	22	R4	2.0%	4.45%	4,393	18.40	R1	25.0%	-0.45%	3.63%	3,584
397.000	Communication Equipment - Lake Rd	-	27	S2	0.0%	3.70%	-						-
398.001	Miscellaneous Equipment - Lake Rd	1,016	24	L3	11.0%	3.71%	38	25.49	L1	-3.1%	-0.22%	3.82%	39
	TOTAL GENERAL PLANT	282,539					16,324						12,652
	COMMON UTILITY												
389.000	Land and Land Rights	3,754											
390.001	Structures and Improvements-Own	48,229	45	R1.5	-13.0%	2.51%	1,211	40.19	R3	-9.2%	-1.06%	1.66%	801
391.001	Office Furniture and Equipment	440	24	L4	0.0%	4.17%	18	20.17	L0		-1.53%	3.43%	15
391.003	Computer Hardware	4,918	8	R0.5	0.0%	12.50%	615	13.97	SC		-3.14%	4.02%	198
391.004	Computer Software	91	9	S1.5	0.0%	11.11%	10	13.40	SC		-2.31%	5.15%	5
391.011	Office Machines	1,199	24	L4	0.0%	4.17%	50	20.17			-1.53%	3.43%	41
392.003	Transportation Equipment-light trucks	-	8	S6	10.0%	11.25%	-	12.99	L1.5	18.8%	-3.08%	3.17%	-
392.004	Transportation Equipment-med trucks	2,002	8	S6	10.0%	11.25%	225	12.99	L1.5	18.8%	-3.08%	3.17%	63
392.005	Transportation Equipment-heavy trucks	-	8	S6	10.0%	11.25%	-	12.99	L1.5	18.8%	-3.08%	3.17%	-
392.006	Transportation Equipment-trailers	-	8	S6	10.0%	11.25%	-	12.99	L1.5	18.8%	-3.08%	3.17%	-
393.000	Stores Equipment	163	27	L1.5	0.0%	3.70%	6	30.66	S1.5		-1.81%	1.45%	2
394.000	Tools, Shop and Garage Equipment	2,243	28	L0	-3.0%	3.68%	83	25.59	L2		-1.20%	2.71%	61
396.002	Power Operated Equipment-long life	-	22	R4	2.0%	4.45%	-	18.91	R1	20.4%	-2.14%	2.07%	-
397.000	Communication Equipment	12,045	27	S2	0.0%	3.70%	446	25.62	L1.5	-5.0%	-0.87%	3.23%	389
398.000	Miscellaneous Equipment	538	24	L3	11.0%	3.71%	20	25.62	L1	-5.0%	-0.91%	3.19%	17
	TOTAL COMMON UTILITY	75,622					2,684						1,592

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AQUILA NETWORKS - L&P Steam
SCHEDULE 4. Depreciation Position Comparison

Account Number	Description	Original Cost 6/30/2005	Staff Proposal ASL (Years)	Staff Proposal Iowa Curve	Staff Proposal Net Salvage	Staff Proposal Depreciation Rate	Staff Proposal Annual Accrual	Company Proposal ASL (Years)	Company Proposal Iowa Curve	Company Proposal Net Salvage	Company Proposal Amorti-zation	Company Proposal Remain. Life Dep. Rate	Company Proposal Annual Accrual
	CORPORATE (SHARE OF UCU)												
389.001	Land and Land Rights	1,805											
390.001	Structures and Improvements-Own	174,273	45	R1.5	0.0%	2.22%	3,869					2.36%	4,113
390.051	Structures and Improvements-Lease	17,260					-						-
391.001	Office Furniture and Equipment	40,055	24	L4	0.0%	4.17%	1,670					5.57%	2,231
391.003	Computer Hardware	42,008	8	R0.5	0.0%	12.50%	5,251					29.59%	12,430
391.004	Computer Software	198,744	9	S1.5	0.0%	11.11%	22,080					12.75%	25,340
391.005	Office Furniture & Equip Computer Dev	65,114	9		0.0%	11.11%	7,234					17.34%	11,291
394.000	Tools, Shop and Garage Equipment	1,018	28	L0	0.0%	3.57%	36					6.93%	71
395.000	Laboratory Equipment	198	28	R2.5	0.0%	3.57%	7					12.87%	25
397.000	Communication Equipment	31,483	27	S2	0.0%	3.70%	1,165					14.36%	4,521
398.000	Miscellaneous Equipment	1,657	24	L3	0.0%	4.17%	69					14.75%	244
	TOTAL CORPORATE	573,615					41,381						60,266
	GRAND TOTAL	15,667,763					395,183						786,675
	Total Depreciation adjustment						(13,594)						377,898