Exhibit No.:	
Issues:	Weather Normalization Sales
Witness:	Henry E. Warren
Sponsoring Party:	MO PSC Staff
Type of Exhibit:	Direct Testimony
Case No.:	GR-2006-0422
Date Testimony Prepared:	October 13, 2006

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

DIRECT TESTIMONY

OF

HENRY E. WARREN

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

Jefferson City, Missouri
October 2006

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the matter of Missouri Gas Energy's Tariff Sheets Designed to Increase Rates for Gas Service in the Company's Missouri Service Area	))))	Case No. GR-2006-0422

AFFIDAVIT OF HENRY E. WARREN

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

Henry E. Warren, 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 5 pages of Direct Testimony 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 to the best of his knowledge and belief.

Henry E. Warren

Subscribed and sworn to before me this 11th day of October, 2006.

Notary Public

My commission expires 9-23-2008

ROSEMARY R. ROBINSON
Notary Public - Notary Seal
State of Missouri
County of Callaway
My Commission Exp. 09/23/2008

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DIRECT TESTIMONY

OF

HENRY E. WARREN

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

DIRECT TESTIMONY

OF

HENRY E. WARREN

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

Q. Please state your name and business address.

A. My name is Henry E. Warren and my business address is P. O. Box 360, Jefferson City, Missouri, 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 Regulatory Economist in the Energy Department of the Utility Operations Division.

Q. How long have you been employed by the Commission?

A. I have worked at the Commission fourteen years.

Q. What is your educational and professional background?

A. I received my Bachelor of Arts and my Master of Arts in Economics from the University of Missouri-Columbia, and a Doctor of Philosophy (PhD) in Economics from Texas A&M University. Prior to joining the PSC Staff (Staff), I was an Economist with the U.S. National Oceanic and Atmospheric Administration (NOAA). At NOAA I conducted research on the economic impact of climate and weather. I began my employment at the Commission on October 1, 1992 as a Research Economist in the Economic Analysis Department. My duties consisted of calculating adjustments to test year energy use based on test-year weather and normal weather, and I also assisted in the review of Electric Resource

Plans for investor owned utilities in Missouri. From December 1, 1997, until May 2001, I was a Regulatory Economist II in the Commission's Gas Department where my duties still included analysis of issues in natural gas rate cases and were expanded to include reviewing tariff filings, applications and various other matters relating to jurisdictional gas utilities in Missouri. On June 1, 2001 the Commission organized an Energy Department and I was assigned to the Tariff/Rate Design Section of the Energy Department. My duties in the Energy Department include analysis of issues in rate cases of natural gas and electric utilities, tariff filings, applications, and various other matters relating to jurisdictional gas and electric utilities in Missouri including review of Electric Resource Plans and Regulatory Plans for investor owned electric utilities in Missouri. I have also served on Task Forces, Collaboratives, and Working Groups dealing with issues relating to jurisdictional natural gas and electric utilities.

Q. Are you a member of any professional organizations?

A. Yes, I am a member of the International Association for Energy Economics and the Western Economics Association.

Q. Have you previously filed testimony before the Commission?

A. Yes, I have filed testimony in the cases listed in Schedule 1 attached to this testimony.

EXECUTIVE SUMMARY

Q. What is the purpose of your direct testimony?

A. My direct testimony covers the billing unit allocation for volumes normalized for weather and read cycle days computed by Staff Witness James Gray in the test year for MGE's Small General Service (SGS) rate class. The test year volumes, the normal volumes, and computed adjustments are shown in Schedules 3.1 through 3.3.

SMALL GENERAL SERVICE BILLING DETERMINANTS

Q. What billing determinants were established for the SGS class by the current rate design and how are Mr. Gray's normalized volumes allocated according to these billing determinants?

A. MGE's current SGS rates are differentiated into two blocks. For SGS customers, the *first block, or initial block,* contains the first 600 Ccf (hundred cubic feet) of natural gas used in the month and the *second block, or tail block,* contains all volumes over 600 Ccf per month. In order for Staff witness, Mr. Paul Harrison, to compute the revenues associated with the normal volumes, the normal volumes must be properly allocated monthly to each block to determine the rate at which the volumes are to be computed.

Q. What data are used to compute these billing determinants?

A. The Company provided Staff with test year (January - December 2005) monthly active meters and volumes by block for the SGS rate code and customer classes served on the SGS tariff. I used the Company's test year blocked volumes to determine the percentage of usage falling into each rate block for each month in the Kansas City District, St. Joseph District, and Joplin District.

Q. How did you use that data to determine normalized billing determinants for the test year?

A. For the SGS class, using the monthly blocked data for January – December 2005, the monthly percent of use in the initial block has a high correlation with the monthly average use per customer per day. I observed that in the lower heating months of May through October the percent in the first block is nearly constant. In these months the use per customer is less than 125 Ccf. I used a simple average of the percent in the first block in the

test year months May-October to estimate the normal percent in the first block for the months of May-October. For the remaining months, November-April, which have more heating use, I used regression analysis to estimate an equation that quantified the relationship between the percentage of use in the first block in a month and the average use per customer per month (Schedules 2.1 – 2.3). I used this relationship in order to estimate normal billing units in each month. Using the Company's test year monthly customer counts and bill frequencies for the SGS class, I used the monthly Ccf per customer per day in the test year months of January – December 2005 to estimate an equation that related it to the monthly percent use in the first block. Next, the normal monthly usage per customer, computed by Staff Witness, James Gray, was used in the regression equation to estimate the normal monthly percent in the first block.

In computing the adjustment to the observed test year volumes that will yield the estimated normal volumes, the adjustment in the second block is set equal to the total minus initial block adjustment (Schedules 3-1 -- 3-3). In each month the block adjustments are restricted so neither block can go in a different direction than the total adjustment. If the block adjustments initially have opposite signs, the adjustment of the volumes in the first block is set to zero. The second block adjustment is then equal to the total adjustment. All the monthly block adjustments were initially in the same direction as the total adjustment so this procedure to make adjustments consistent was not used.

The difference between the predicted normal volumes and test year volumes gives an estimated monthly adjustment for the first block (Schedules 3.1 – 3.3). The monthly adjustments to Test Year volumes in the blocks are in the last column of the Tables in Schedules 3.1 - 3.3. The monthly adjustments are summed into seasonal and annual totals.

The normal volumes in the first block are estimated to be 47% of the total and the second block 53% of the total annual volumes (Schedules 3.1 – 3.3).

Q. What is the Staff's recommendation for weather adjusted gas usage for the SGS class?

A. Schedules 3.1 – 3.3 contain the adjustment volumes for each billing month during the test year. The total adjustment for the SGS customer classes is a positive 11,494,804 Ccf. The total of these adjustments accounts for 100% of the adjustments made to both the first and second blocks. The volumes were allocated to the blocks for the SGS class as shown in Schedules 3.1 -3.3. These adjustments were supplied to Staff witness Mr. Paul Harrison for use in revenue normalization.

Q. Does this conclude your prepared Direct Testimony?

A. Yes, it does.

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

PREVIOUS CASES IN WHICH PREPARED TESTIMONY, REPORT OR REVIEW WAS SUBMITTED BY:

HENRY E. WARREN, PHD

COMPANY NAME	CASE NUMBER
St. Joseph Light and Power Company	GR-93-042[1]
Laclede Gas Co.	GR-93-149
Missouri Public Service	GR-93-172[1]
Western Resources	GR-93-240[1]
Laclede Gas Co.	GR-94-220[1]
Kansas City Power & Light Co.	EO-94-360
United Cities Gas Co.	GR-95-160[1]
UtiliCorp United, Inc.	EO-95-187
The Empire District Electric Co.	ER-95-279[1]
St. Joseph Light and Power Company	EO-96-5
The Empire District Electric Co.	EO-96-56
Laclede Gas Co.	GR-96-193[1]
Missouri Gas Energy	GR-96-285[1]
The Empire District Electric Co.	ER-97-081[1]
Union Electric Co.	GR-97-393[1]
Missouri Gas Energy	GR-98-140[1]
Laclede Gas Co.	GR-98-374[1]
St. Joseph Light & Power Company	GR-99-246[1]
Laclede Gas Co.	GR-99-315[1]
Union Electric Company (d/b/a AmerenUE)	GR-2000-512[1]
Missouri Gas Energy	GR-2001-292[1]

[1] Testimony includes computations to adjust test year volumes, therms, or kWh to normal weather.

PREVIOUS CASES IN WHICH PREPARED TESTIMONY, REPORT OR REVIEW WAS SUBMITTED BY:

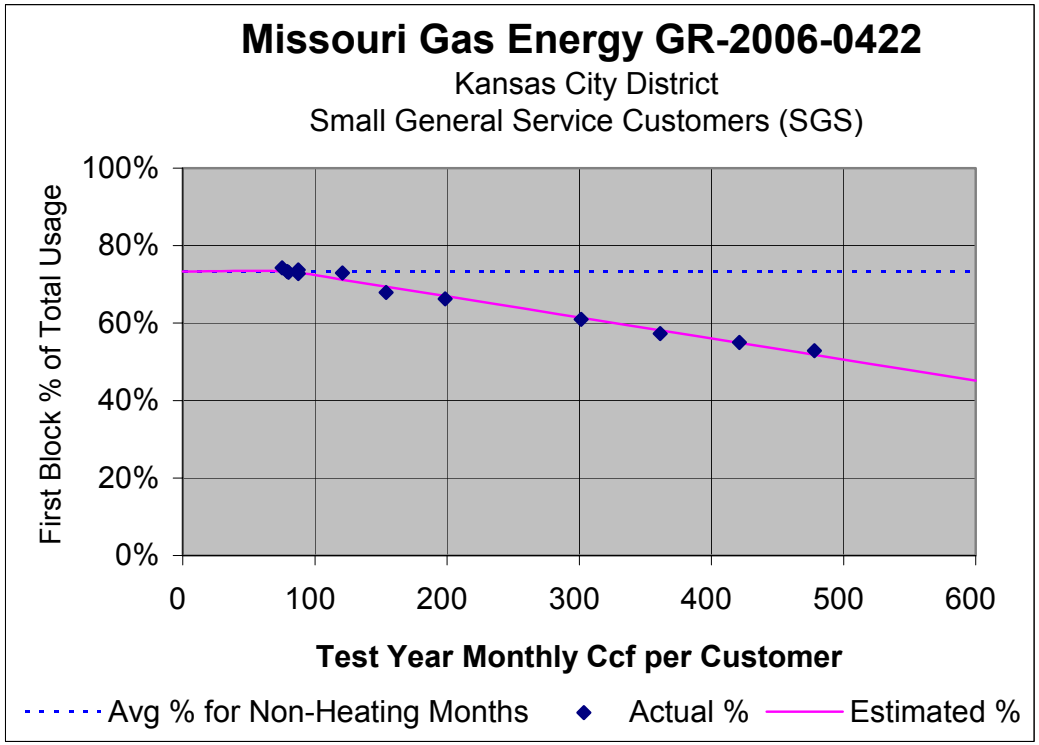
HENRY E. WARREN, PHD

(CONTINUED)

COMPANY NAME	CASE NUMBER
Laclede Gas Co.	GR-2001-629[1]
Union Electric Co. (d/b/a AmerenUE)	GC-2002-388
Laclede Gas Co.	GC-2002-0110
Laclede Gas Co.	GR-2002-0356[1]
Aquila, Inc.	GC-2003-0131
Laclede Gas Co.	GC-2003-0212
Laclede Gas Co.	GT-2003-0117
Aquila Networks (MPS and L&P)	GR-2004-0072[1]
Missouri Gas Energy	GR-2004-0209
Laclede Gas Co.	GC-2004-0240
Kansas City Power & Light	EO-2005-0329
Union Electric Co. (d/b/a AmerenUE)	EO-2006-0240
The Empire District Electric Company	ER-2006-0315
The Atmos Energy Corporation	GR-2006-0387

Regression Output: Kansas City District

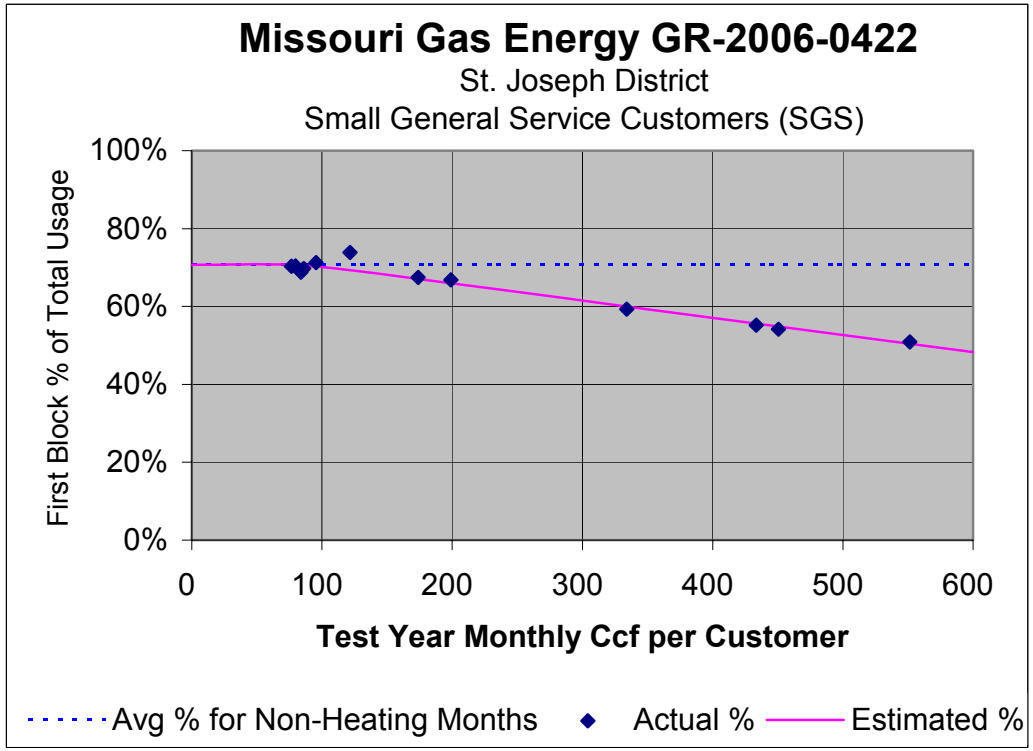
		t statistic
Constant	0.77743556	161.9728
Std Err of Y Est	0.00479979	
R Squared	0.98620831	
No. of Observations	12	
Degrees of Freedom	10	
X Coefficient(s)	-0.000543	-28.0639
Std Err of Coef.	1.935E-05	



Schedule 2.1

Regression Output: St. Joseph District

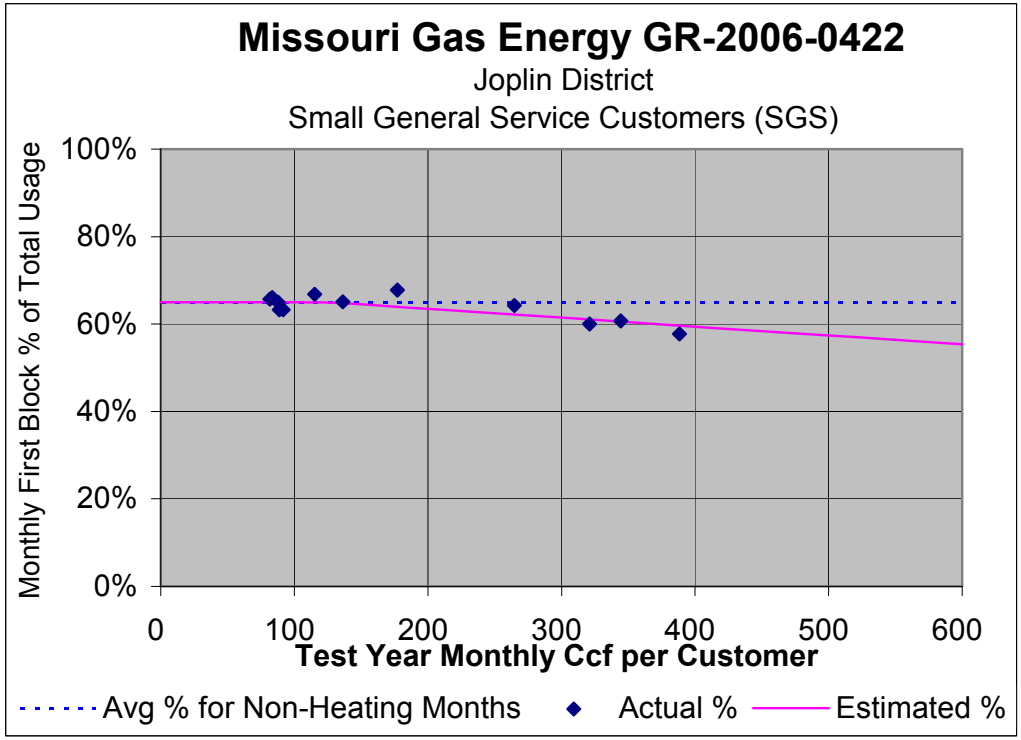
			t statistic
Constant		0.74717866	86.4945
Std Err of Y Est		0.00863845	
R Squared		0.94789877	
No. of Observations		12	
Degrees of Freedom		10	
X Coefficient(s)	-0.000441		-14.1819
Std Err of Coef.	3.108E-05		



Schedule 2.2

Regression Output: Joplin District

			t statistic
Constant		0.67457305	61.7319
Std Err of Y Est		0.01092747	
R Squared		0.56578564	
No. of Observations		12	
Degrees of Freedom		10	
X Coefficient(s)	-0.000201		-3.9158
Std Err of Coef.	5.135E-05		



Schedule 2.3

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Kanas City Division

Test Year January - December 2005

SMALL GENERAL GAS SERVICE (SGS)

ACTUAL VOLUMES

	SGS Commercial and Industrial Actual Ccf			
Month	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	47,743	12,059,344	10,762,984	22,822,328
Feb	48,125	11,148,958	9,123,258	20,272,216
Mar	47,543	8,736,859	5,594,607	14,331,466
Apr	45,484	5,978,718	3,051,236	9,029,954
May	42,651	3,759,448	1,395,688	5,155,136
Jun	37,032	2,354,171	882,173	3,236,344
Jul	35,118	2,033,979	741,275	2,775,254
Aug	34,615	1,935,332	670,469	2,605,801
Sep	34,509	2,016,665	743,380	2,760,045
Oct	37,823	2,438,587	868,564	3,307,151
Nov	43,455	4,537,188	2,144,883	6,682,071
Dec	47,375	9,799,985	7,311,801	17,111,786
ANNUAL	501,473	66,799,234	43,290,318	110,089,552
%		61%	39%	
NOV-MAR	234,241	46,282,334	34,937,533	81,219,867
%	47%	69%	81%	74%
APR-OCT	267,232	20,516,900	8,352,785	28,869,685
%	53%	31%	19%	26%

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Kanas City Division

Test Year January - December 2005

SMALL GENERAL GAS SERVICE (SGS)

NORMAL VOLUMES

	SGS Commercial and Industrial Normal Ccf			
	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	47,743	12,522,898	12,263,689	24,786,588
Feb	48,125	11,818,839	10,729,428	22,548,267
Mar	47,543	9,174,934	6,155,141	15,330,074
Apr	45,484	6,746,800	3,692,422	10,439,223
May	42,651	3,343,362	1,175,827	4,519,189
Jun	37,032	2,622,247	1,010,235	3,632,482
Jul	35,118	2,057,609	749,866	2,807,475
Aug	34,615	1,948,917	675,408	2,624,324
Sep	34,509	2,201,607	825,374	3,026,981
Oct	37,823	3,011,666	1,150,560	4,162,225
Nov	43,455	5,330,530	2,687,680	8,018,210
Dec	47,375	10,011,600	7,658,838	17,670,438
ANNUAL	501,473	70,791,010	48,774,467	119,565,477
%		59%	41%	
NOV-MAR	234,241	48,858,801	39,494,776	88,353,577
%		69%	81%	74%
APR-OCT	267,232	21,932,209	9,279,691	31,211,900
%		31%	19%	26%

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422

Kanas City Division

Test Year January - December 2005

SMALL GENERAL GAS SERVICE (SGS)

ADJUSTMENTS TO VOLUMES

	SGS Commercial and Industrial Adjustment Ccf			
	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	0	463,554	1,500,705	1,964,260
Feb	0	669,881	1,606,170	2,276,051
Mar	0	438,075	560,534	998,608
Apr	0	768,082	641,186	1,409,269
May	0	(416,086)	(219,861)	(635,947)
Jun	0	268,076	128,062	396,138
Jul	0	23,630	8,591	32,221
Aug	0	13,585	4,939	18,523
Sep	0	184,942	81,994	266,936
Oct	0	573,079	281,996	855,074
Nov	0	793,342	542,797	1,336,139
Dec	0	211,615	347,037	558,652
ANNUAL	0	3,991,776	5,484,149	9,475,925
%		42%	58%	
NOV-MAR	0	2,576,467	4,557,243	7,133,710
%		65%	83%	75%
APR-OCT	0	1,415,309	926,906	2,342,215
%		35%	17%	25%

Schedule 3.1

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422
St. Joseph Division
Test Year January - December 2005
SMALL GENERAL GAS SERVICE (SGS)
ACTUAL VOLUMES

Month	SGS Commercial and Industrial Actual Ccf			
	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	3,597	1,010,381	973,256	1,983,637
Feb	3,560	868,957	734,972	1,603,929
Mar	3,487	691,113	473,526	1,164,639
Apr	3,353	445,794	221,295	667,089
May	3,193	286,420	101,210	387,630
Jun	2,727	163,521	70,977	234,498
Jul	2,592	149,717	67,918	217,635
Aug	2,578	138,496	58,558	197,054
Sep	2,579	144,619	60,810	205,429
Oct	2,831	192,827	77,741	270,568
Nov	3,280	384,419	185,631	570,050
Dec	3,497	836,094	679,596	1,515,690
ANNUAL	37,274	5,312,358	3,705,490	9,017,848
%		59%	41%	
NOV-MAR	17,421	3,790,964	3,046,981	6,837,945
%	47%	71%	82%	76%
APR-OCT	19,853	1,521,394	658,509	2,179,903
%	53%	29%	18%	24%

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422
St. Joseph Division
Test Year January - December 2005
SMALL GENERAL GAS SERVICE (SGS)
NORMAL VOLUMES

Month	SGS Commercial and Industrial Normal Ccf			
	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	3,597	1,048,171	1,091,739	2,139,911
Feb	3,560	919,469	837,035	1,756,504
Mar	3,487	731,959	525,301	1,257,259
Apr	3,353	522,344	283,024	805,369
May	3,193	244,874	78,739	323,614
Jun	2,727	183,580	80,306	263,887
Jul	2,592	152,501	69,070	221,571
Aug	2,578	139,642	59,032	198,674
Sep	2,579	161,918	67,970	229,888
Oct	2,831	235,887	100,659	336,545
Nov	3,280	431,023	218,936	649,959
Dec	3,497	827,483	664,808	1,492,291
ANNUAL	37,274	5,598,852	4,076,620	9,675,472
%		58%	42%	
NOV-MAR	17,421	3,958,106	3,337,819	7,295,925
%	47%	71%	82%	75%
APR-OCT	19,853	1,640,746	738,801	2,379,547
%	53%	29%	18%	25%

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422
St. Joseph Division
Test Year January - December 2005
SMALL GENERAL GAS SERVICE (SGS)
ADJUSTMENTS TO VOLUMES

SGS Commercial and Industrial Adjustment Ccf			
Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
0	37,790	118,483	156,274
0	50,512	102,063	152,575
0	40,846	51,775	92,620
0	76,550	61,729	138,280
0	(41,546)	(22,471)	(64,016)
0	20,059	9,329	29,389
0	2,784	1,152	3,936
0	1,146	474	1,620
0	17,299	7,160	24,459
0	43,060	22,918	65,977
0	46,604	33,305	79,909
0	(8,611)	(14,788)	(23,399)
0	286,494	371,130	657,624
	44%	56%	
0	167,142	290,838	457,980
	58%	78%	70%
0	119,352	80,292	199,644
	42%	22%	30%

Schedule 3.2

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422
Joplin Division
Test Year January - December 2005
SMALL GENERAL GAS SERVICE (SGS)
ACTUAL VOLUMES

	SGS Commercial and Industrial Actual Ccf			
Month	Customer Meters	1st Block 0 - 600 Ccf	Tail Block Over 600 Ccf	Total Ccf
Jan	12,311	2,758,862	2,021,807	4,780,669
Feb	12,268	2,564,529	1,659,969	4,224,498
Mar	12,099	2,057,301	1,146,883	3,204,184
Apr	11,677	1,402,218	666,760	2,068,978
May	10,931	842,135	418,296	1,260,431
Jun	8,960	512,004	275,395	787,399
Jul	8,255	455,027	234,014	689,041
Aug	8,139	436,900	228,106	665,006
Sep	8,113	454,973	263,760	718,733
Oct	9,147	530,102	308,016	838,118
Nov	11,125	987,255	529,331	1,516,586
Dec	12,226	2,355,405	1,568,697	3,924,102
ANNUAL	125,251	15,356,711	9,321,034	24,677,745
%		62%	38%	
NOV-MAR	60,029	10,723,352	6,926,687	17,650,039
%	48%	70%	74%	72%
APR-OCT	65,222	4,633,359	2,394,347	7,027,706
%	52%	30%	26%	28%

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422
Joplin Division
Test Year January - December 2005
SMALL GENERAL GAS SERVICE (SGS)
NORMAL VOLUMES

	SGS Commercial and Industrial Normal Ccf			
	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	12,311	3,178,753	2,433,677	5,612,430
Feb	12,268	2,812,679	1,881,450	4,694,129
Mar	12,099	2,087,393	1,169,846	3,257,239
Apr	11,677	1,477,417	716,650	2,194,067
May	10,931	676,312	329,089	1,005,401
Jun	8,960	547,111	294,281	841,393
Jul	8,255	460,030	236,706	696,736
Aug	8,139	439,679	229,601	669,280
Sep	8,113	494,164	284,843	779,007
Oct	9,147	627,363	360,339	987,703
Nov	11,125	1,057,928	573,075	1,631,003
Dec	12,226	2,216,071	1,454,542	3,670,613
ANNUAL	125,251	16,074,901	9,964,099	26,039,000
%		62%	38%	
NOV-MAR	60,029	11,352,825	7,512,589	18,865,414
%	48%	71%	75%	72%
APR-OCT	65,222	4,722,076	2,451,509	7,173,586
%	52%	29%	25%	28%

MISSOURI GAS ENERGY
CASE NO. GR-2006-0422
Joplin Division
Test Year January - December 2005
SMALL GENERAL GAS SERVICE (SGS)
ADJUSTMENTS TO VOLUMES

	SGS Commercial and Industrial Adjustment Ccf			
	Customer Meters	1st Block 0 - 600 Ccf	Tail Block > 600 Ccf	Total Ccf
Jan	0	419,891	411,870	831,761
Feb	0	248,150	221,481	469,631
Mar	0	30,092	22,963	53,055
Apr	0	75,199	49,890	125,089
May	0	(165,823)	(89,207)	(255,030)
Jun	0	35,107	18,886	53,994
Jul	0	5,003	2,692	7,695
Aug	0	2,779	1,495	4,274
Sep	0	39,191	21,083	60,274
Oct	0	97,261	52,323	149,585
Nov	0	70,673	43,744	114,417
Dec	0	(139,334)	(114,155)	(253,489)
ANNUAL	0	718,190	643,065	1,361,255
%		53%	47%	
NOV-MAR	0	629,473	585,902	1,215,375
%		88%	91%	89%
APR-OCT	0	88,717	57,162	145,880
%		12%	9%	11%

Schedule 3.3