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June 15, 2016

VIA ELECTRONIC FILING

Mr. Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, Minnesota 55101-2147

RE: Petition for Change in Contract Demand Entitlement
Docket No. _____

Dear Mr. Wolf:

Attached hereto, please find Greater Minnesota Gas, Inc.'s Petition for Change in Contract Demand Entitlement for 2016-2017 Heating Season for filing in a new docket.

All individuals identified on the attached service list have been electronically served with the same.

Thank you for your assistance. Please do not hesitate to contact me should you have any questions or concerns or if you require additional information. My direct dial number is (507) 665-8657 and my email address is kanderson@greatermngas.com.

Sincerely,

GREATER MINNESOTA GAS, INC.

/s/
Kristine A. Anderson
Corporate Attorney

Enclosure

cc: Service List

CERTIFICATE OF SERVICE

I, Kristine Anderson, hereby certify that I have this day served a true and correct copy of the following document to all persons at the addresses indicated on the attached list by electronic filing, electronic mail, or by depositing the same enveloped with postage paid in the United States Mail at Le Sueur, Minnesota:

Greater Minnesota Gas, Inc.'s Petition for Change in Contract Demand Entitlement for 2016-2017 Heating Season
Docket No. _____

filed this 15th day of June, 2016.

/s/ Kristine A. Anderson
Kristine A. Anderson, Esq.
Corporate Attorney
Greater Minnesota Gas, Inc.

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Julia	Anderson	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota St St. Paul, MN 551012134	Electronic Service	No	GEN_SL_Greater Minnesota Gas, Inc._GMG PGA Monthly Filing
Kristine	Anderson	kanderson@greatermngas.com	Greater Minnesota Gas, Inc.	202 S. Main Street Le Sueur, MN 56058	Electronic Service	No	GEN_SL_Greater Minnesota Gas, Inc._GMG PGA Monthly Filing
Bob	Emmers	bemmers@greatermngas.com	Greater Minnesota Gas, Inc.	202 South Main St. PO Box 68 Le Sueur, MN 56058	Electronic Service	No	GEN_SL_Greater Minnesota Gas, Inc._GMG PGA Monthly Filing
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No	GEN_SL_Greater Minnesota Gas, Inc._GMG PGA Monthly Filing
Nicolle	Kupser	nkupser@greatermngas.com	Greater Minnesota Gas, Inc.	202 South Main Street P.O. Box 68 Le Sueur, MN 56058	Electronic Service	No	GEN_SL_Greater Minnesota Gas, Inc._GMG PGA Monthly Filing
John	Lindell	agorud.ecf@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	GEN_SL_Greater Minnesota Gas, Inc._GMG PGA Monthly Filing
Greg	Palmer	gpalmer@greatermngas.com	Greater Minnesota Gas, Inc.	PO Box 68 202 South Main Street Le Sueur, MN 56058	Electronic Service	No	GEN_SL_Greater Minnesota Gas, Inc._GMG PGA Monthly Filing
Eric	Swanson	eswanson@winthrop.com	Winthrop Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	GEN_SL_Greater Minnesota Gas, Inc._GMG PGA Monthly Filing
Daniel	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551022147	Electronic Service	No	GEN_SL_Greater Minnesota Gas, Inc._GMG PGA Monthly Filing

STATE OF MINNESOTA

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger	Chair
Nancy Lange	Commissioner
Dan Lipschultz	Commissioner
Matt Schuerger	Commissioner
John Tuma	Commissioner

MPUC Docket No. _____

PETITION FOR CHANGE IN CONTRACT DEMAND ENTITLEMENT FOR 2016-2017 HEATING SEASON

OVERVIEW

Greater Minnesota Gas, Inc. ("GMG") submits this filing to the Minnesota Public Utilities Commission ("Commission") to notify the Commission of a change in contract demand entitlement for the 2016-2017 heating season. GMG will include a portion of the rate impact of these changes in GMG's Purchased Gas Adjustments effective July 1, 2016 and the balance effective November 1, 2016, pending Commission approval.

GMG is committed to continuing to provide sufficient capacity to serve its firm customers throughout the heating season while simultaneously protecting its ratepayers from paying unduly high amounts for maintaining its reserve. GMG has continued to employ an analytical framework that has proven to be sound and provide sufficient protection for GMG's customers. GMG's anticipated growth for purposes of this Petition is consistent with its anticipated growth reflected in its capital structure filing for 2016. GMG anticipates informally reviewing its projections, demand entitlement, and reserve margin immediately prior to the heating season to ensure that adequate capacity will be available to meet projected peak day demand and design day conditions, just as it has done in recent years. In the event that an adjustment of its contract demand request is necessary at that time, GMG will undertake appropriate action to address that scenario.

Minnesota Rule 7825.2910 Subp. 2 requires GMG to identify four things when filing for a change in demand, namely: discussion of the factors contributing to the need for changing demand; GMG's design day demand analysis; a summary of GMG's customers' winter and summer usage for all customer classes; and, a description of GMG's design day gas supply from all sources under its proposed level. This Petition addresses each of the requisite four areas based on GMG's analysis of its current customer usage and patterns, the impact GMG's current and

anticipated growth on the upcoming heating season, and forecasting the size and expected load of new and recently acquired customers.

DISCUSSION

A review of GMG's demand entitlement filings over the last several years demonstrates that they have included substantial changes as a direct result of the Company's growth. In order to address both a narrow reserve margin and the uncertainty of predictive modeling for conversion customers, GMG's reserve margin was increased for the 2013-2014 heating season and was maintained at a similar level for the majority of the 2014-2015 heating season. GMG's increased customer base resulted in preventing any adverse rate impact on GMG's ratepayers despite GMG purchasing increased reserve capability. As GMG's growth has continued, GMG has successfully employed purchasing strategies that increase its reserve capability without resulting in a substantial impact on ratepayers. GMG's reserve margin has consistently been sufficient to ensure that its customers' needs were satisfied through the duration of the heating season, including on unseasonably cold days. GMG's supply portfolio changes assured reliable firm supply for its customer base. In its demand entitlement proposal for 2015-2016, GMG employed similar modeling theories as those used in recent years; and, GMG's six months of monthly progress filings demonstrated that the modeling theories were sound and appropriately predicted the Company's demand needs. In preparing the current demand entitlement assessment, GMG again utilized a combination of analytical tools to balance the competing components of maintaining a sufficient reserve and maintaining reasonable customer rates.[1] By combining statistical regression analysis based on its existing customer data, mathematical analysis, projected growth information, and budget year analysis, GMG's current proposed demand entitlement is again soundly supported by its supporting data, attached hereto and incorporated by reference.

GMG seeks an increase in total demand entitlement as follows:

Previous Entitlement	Proposed Entitlement 2016-17 (Dth)	Entitlement Changes (Dth)	% Change From Previous Year
12,509	13,359	850	6.8%

[1]. GMG was ordered to use three years of data and separate its regression analysis by type of customer beginning with this filing. As discussed in more detail below, GMG performed a regression utilizing that direction; but, given the sparse data from the first two years of the regression timeline, it did not provide a useful result. GMG believes that the analysis it relied on herein is appropriate, given the totality of the circumstances.

1. GMG Requires a Small Increase in Demand to Account for Growth and the Corresponding Change in its Design Day Calculations to Assure Its Ability to Maintain an Adequate Reserve Margin Throughout the Heating Season.

An increase in demand entitlement is requested by GMG to insure that it has sufficient reserve to meet its customers' needs. GMG's reserve margin levels over the last several years have satisfactorily balanced the necessity of a sufficient reserve margin against protection for its ratepayers from an unreasonable reserve cost. The Department has previously noted that the OES generally uses a gauge of five percent to determine the appropriateness of firm's reserve margin. However, in recent years, the Commission has approved higher reserve margins for GMG. GMG agrees that utilizing a conservative approach when allocating a reserve margin is appropriate. GMG believes that maintaining its reserve margin at a conservative level continues to be prudent and has again utilized its portfolio in a manner that allows its reserve margin to be maintained without undue cost burdening its ratepayers. In fact, GMG's proposed demand entitlement would result in a decrease in customer rates of approximately $6.00 per year. Therefore, GMG proposes a reserve margin of 6.3% for the upcoming heating season.

GMG's predictive modeling calculations reflect a need for a change in its design day entitlement. The table below summarizes GMG's design day and reserve calculations:

Planned Customer Base		
Design Day Requirement (Attachment A, Page 2 of 3, line 11)	12,564	Dth
Reserve Margin at 6.3%	795	Dth
Design Day Requirement With 6.3% Reserve Margin	13,359	Dth

The ultimate objective of a design day analysis is to forecast anticipated firm customer demand at design temperatures to predict the necessary level of firm resources to sufficiently serve customer in the unlikely event that design day weather occurs. In order to meet that objective, a small increase in GMG's contract demand entitlement is warranted.

2. GMG's Design Day Analysis Ensures Viable Forecasting Given Available Customer Data and Predictive Information.

GMG's current design day projection is based on a two-stage process: analyzing two separate econometric models to forecast its supply needs for the upcoming heating season. Consistent with previous Commission directives and Department requests, GMG employed both a regression model separating residential and commercial customers' needs and a mathematical model in its design day analysis. Although all concerned anticipated that GMG's two-class regression model would be based on the most recent three years of data, actual performance of that regression analysis demonstrated that there is still not sufficient data to rely on a three-year sample and that relying on three years of data will produce a flawed result. Hence, GMG determined that relying only on the most recent usage and weather data in its regression analysis produces the result most likely to provide sufficient protection for its customers.

GMG employed an ordinary least square regression analysis methodology to predict peak day demand, as it has done for several years. As discussed herein, GMG ultimately relied on a regression based on recent data in its final modeling because the results of the three-year data model suggest that the ability to apply such a model is still in its infancy. Given the limited data available for the first two of the three years, a three-year regression analysis did not provide a result that will adequately protect GMG's customers should design day weather conditions occur. GMG's regression analysis is predicated on a 90 heating degree day as its basis, based on an average design day temperature of -25°F. GMG's design day forecast for its existing customers for the 2016-2017 heating season is based on 12,564 Dth, which is an increase of 1,438 Dth over the 2015-2016 design day requirements. The derivation of the separated class regression design day forecast can be seen in Attachment A, Page 2 of 3.

GMG notes that, when it performed a regression analysis relying on usage and weather data from November 1, 2013 through March 31, 2016, the regression produced a flawed result that predicted the design day requirement at 10,705, which is a level that is too low to use for predictive purposes when the goal is to ensure that customers have sufficient access to gas to meet their needs on a very cold day. GMG posits that, since the vast majority of its larger firm customers have been added over the last two years, and since some customer conversions did not happen early enough to capture full heating season data, a three-year regression is improperly skewed. GMG believes that it is more appropriate to rely only on data from the last heating season, since that is the most accurate reflection of actual customer usage for its current customers. Furthermore, given the unusually warm weather conditions for the first part of the heating season last year, including data from the weather anomaly would likely lead to a underestimation of design day needs and could jeopardize customers if the 2016-2017 heating season returns to normal seasonable conditions. Ergo, GMG determined that the safest and most accurate prediction of its true heating season usage needs and design day modeling was to have a regression model broken down by residential and commercial firm customers based on usage and weather data for January, 2016 through March, 2016.

Attachment A details the regression analysis calculations upon which GMG's contract demand entitlement petition is based, insofar as it relates to its existing customers and quantitative historical data. In conducting its least square regression analysis, GMG employed the following methodology:

> Data is provided for residential customers and for commercial customers. Each analysis was completed in the same fashion, by using historical firm sales volume data and actual temperature data for the heating season periods from January 2016 through March 2016 for the reasons discussed above. The firm sales volume data was correlated to geographic weather data for Minneapolis.[2]

[2]. Although GMG historically assigned its town border stations geographically to a variety of weather sites, GMG now has multiple town border stations located in a variety of areas across the state. Consequently, GMG predicated its modeling on weather conditions in Minneapolis. Similar methodology is employed by larger natural gas utilities with service throughout the state.

Employing widely-accepted statistical analysis, a linear equation was derived from the linear regression model that was used to calculate the design day usage per customer. For each regression group, the forecasted number of firm customer for the 2016-2017 heating season was then multiplied by the design day usage per customer to derive the design day requirements.

The linear regression models the linear relationship between heating degree day data and firm customer natural gas usage by fitting a linear equation to observed data. The linear regression line has an equation of the form:

$$\boldsymbol{Y = a + b\,X}$$

Where X (Heating Degree Days) is the explanatory variable and Y (Firm Sales Volume) is the dependent variable. The slope of the line is b, and a is the intercept (Firm Non-Temp Sensitive Volume).

The strength of the linear association is quantified by the correlation coefficient. The correlation coefficient takes a positive value between 0 and 1, with 1 indicating perfect correlation (all points would lay along a straight line in this case). A correlation value close to 0 indicates no association between the variables. The formula for computing the correlation coefficient is given by:

$$r = \frac{1}{n-1} \Sigma \left(\frac{x - \overline{x}}{s_x} \right) \left(\frac{y - \overline{y}}{s_y} \right)$$

The reliance on accepted statistical modeling methodology to obtain quantitative data for forecasting purposes is intended to mitigate discrepancies between actual resource utilization and planned supply needs. Hence, GMG has attempted to secure all available information to gauge likely customer sendout during a design day weather occurrence.

GMG attempts to adequately predict growth; however, it does use a conservative approach. Nonetheless, as the GMG's monthly submissions demonstrated, GMG's design day modeling, taken in its entirety, has been appropriate. Empirical evidence suggests that, when GMG brings natural gas to a previously unserved area, many new customers ultimately avail themselves of the benefits that come with converting to gas use. Hence, sometimes actual throughput exceeds forecasted needs. However, when weather is unseasonably warm and/or propane prices are low, both of which occurred during the 2015-2016 heating season, new customers wait longer to convert to natural gas usage. Since such anomalies are unpredictable, they too can impact actual throughput. Such phenomena support GMG's continued use of a conservative reserve margin.

In order to provide a well-rounded analysis, GMG also utilized a mutually exclusive mathematical analysis based on actual throughput as separate modeling tool as a second stage in its design day analysis, which appears below. GMG mathematically examined its peak day sendout from last year; and, the mathematical analysis also validates GMG's entitlement request.

Mathematical Analysis Based on Prior Heating Season

GMG's peak day during the last heating season occurred on January 17, 2016 at 73 HDD and resulted in a firm sales throughput of 9,495 Dth/Day, as shown in Attachment A, Page 3. The firm customer count on that date was 6,643, and the resulting use per customer was 1.429 Dth.

GMG applied a mathematical analysis based on last season's peak day usage and anticipated customer additions,[3] as shown below. The analysis demonstrates that GMG's proposed contract demand entitlement is both sufficient and appropriate.

Mathematical Peak Day Analysis	
Actual Peak Day Throughput	9,495
/ Customer Count on Peak Day	6,643
= Use Per Customer on Peak Day	1.429
x Adjustment for 90 HDD	90/73
= Peak Day Usage Per Customer if 90 HDD	1.762
Additional Residential Customers	762
Additional Commercial Customers	77
x Total Anticipated Customer Count	7,482
= Total Projected Peak Day Requirement	13,185
Proposed Contract Demand Entitlement	13,359
Reserve Margin	1.3%

The proposed demand entitlement does not change; but, due to the mathematical modeling, the peak day requirement is slightly different. Nonetheless, GMG's mathematical analysis confirms that its requested demand entitlement will provide sufficient reserve.

[3] . GMG historically used Customer Equivalents ("CEs") as part of its modeling and forecasting because, given its size, young system, and changing customer growth patterns, there can be significant variations in use and, therefore, impacts on modeling, based on customer type. GMG utilized CEs to improve its accuracy for financial and growth modeling purposes. However, Staff and the Commission questioned the use of CEs in the prior demand entitlement docket; therefore, to avoid any confusion and to comport with the apparent preference of staff, GMG's modeling for the current proposal is based only on customer count and customer additions. GMG anticipates that its customer growth for 2016 will be of a similar customer mix to its current customer base.

3. The Summary of Winter Versus Summer Usage for All GMG Customer Classes Supports a Change in Demand Entitlement.

A summary of GMG's customer usage for both the winter and summer seasons is provided below, broken down by customer class. The summary is based on usage for the twelve month period ending December 31, 2015.[4]

Seasonal Customer Usage by Class (Dth)			
	Winter	**Summer**	**Total**
Residential - Firm	352,227	111,715	463,943
Commercial - Firm	13,945	4,583	18,528
Industrial - Firm	272,954	141,369	414,323
Flexible Rate - Firm	18,762	5,213	23,975
Total Firm	*657,888*	*262,880*	*920,769*
Agricultural - Interruptible	*19,840*	*14,187*	*34,027*
Industrial - Interruptible	21,942	13,979	35,921
Flexible Rate - Interruptible	3,885	38,439	42,324
Total Interruptible (Non-Ag)	*25,827*	*52,418*	*78,245*
Total	703,555	329,485	1,033,040

GMG's proposed increase in its contract demand entitlement will assure sufficient supply and reliability for its customers throughout the heating season. GMG's contract arrangements secure supply for both the summer months and the winter months to sufficiently serve its firm customer base throughout the year. GMG's proposal strikes the ideal balance for both cost and efficiency protections for its customers.

4. The Anticipated Design Day Gas Supply is in the Best Interest of Ratepayers Because it Provides for an Adequate Reserve Margin While Minimizing the Rate Impact.

GMG recognizes that the primary concerns of the Commission and the Department with regard to natural gas suppliers are sufficient assurance of reliability and reasonable rates for customers. It is critical that GMG is fully prepared to provide enough firm supply to meet its customers' needs. In order to assure that it can meet all of its customers' needs throughout the year, GMG's proposal provides a balanced portfolio based on an integrated system. To that end, GMG has secured a variety of gas supply sources. A summary of GMG's demand profile shows the changes in GMG's supply sources, as compared to the supply sources for the two previous

[4] . GMG notes that previous demand entitlement dockets filed during the second half of the year incorporated data for the twelve month period ending June 30th of the filing year. However, since this Petition is being submitted prior to June 30th, GMG utilized seasonal customer usage data for the 2015 calendar year.

heating seasons, as seen in Attachment B. GMG is primarily served by the Northern Natural Gas and Viking Gas Transmission pipeline systems. Attachment C identifies the contracts GMG holds with its sources; and, it also specifically notes proposed changes to its contracts for the 2016-2017 heating season and the corresponding change in contract demand costs.

Notably, GMG had an opportunity to obtain an additional 500 Dth of non-recallable capacity release from Northern Natural Gas beginning in July, 2016. Because GMG needed to act quickly to secure the capacity, which rarely comes available, GMG did so and intends to include the rate impact beginning in July, 2016. GMG intends to wait to secure the balance of the necessary contract demand entitlement capacity until after the Commission has approved the entitlement amount. Hence, GMG respectfully requests that this Petition be considered as expeditiously as possible.

GMG respectfully requests that the Commission approve inclusion of the cost for the additional Northern Natural capacity in its Purchased Gas Adjustment effective July 1, 2016; and, that the balance of additional demand entitlement costs be included effective November 1, 2016. GMG will include the charge in its PGA pending Commission approval.

While GMG's relatively early submission of its Petition herein allows for substantial time to consider its request prior to the heating season, it also necessarily requires GMG to engage in prediction regarding both anticipated customer usage and anticipated customer growth for the remainder of the current year. As such, GMG intends to analyze its demand entitlement needs as the 2016-2017 heating season nears, essentially to true-up its anticipated needs and make any necessary demand adjustments at that time.

GMG's supply contract scheme is designed so that gas can be delivered to alternate points and can be used elsewhere in GMG's integrated system if necessary at any given time. Thus, GMG has the ability to move supply throughout its service area on a day to day basis as market demand and supply options dictate.

Attachment D provides a summary of the rate impact to firm customers with the contract changes. It demonstrates that GMG's customers will benefit from a reduction in cost due to GMG's supply portfolio changes, even with the slight increase in demand entitlement. Therefore, there is no adverse impact to customer rates as a result of the increased demand entitlement, which further supports its approval.

REQUEST FOR COMMISSION ACTION

GMG's proposed change in contract demand entitlement serves the best interest of its customers.. As the supporting information demonstrates, GMG coordinated its gas-supply planning for the 2016-2017 heating season alongside consideration of previous Department and Commission concerns and recommendations and its broader corporate planning. GMG's proposal strikes the appropriate balance between assuring physical reliability with sufficient supply to serve all customers in the event that design day weather occurs with minimizing the rate impact of maintaining a sufficient reserve on GMG customers. Therefore, GMG

respectfully requests that the Commission approve its Petition for Change in Contract Demand Entitlement for the 2016-2017 Heating Season.

Dated: June 15, 2016

Respectfully submitted,

/s/
Kristine A. Anderson
Corporate Attorney
Greater Minnesota Gas, Inc.
202 S. Main Street
Le Sueur, MN 56068
Phone: 888-931-3411

ATTACHMENT A
Design Day Regression Analysis Background Information

Greater Minnesota Gas, Inc.
Contract Demand Entitlement Filing 2016 - 2017 Heating Season
Design Day Information

	Number of Sales Firm Customers			Design Day Requirement			Total Entitlement + Storage + Peak Shaving			Reserve Margin
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Heating Season	Number of Customers	Change from Pervious Year	% Change from Previous Year	Design Day (Dth)	Change from Pervious Year	% Change from Previous Year	Total Entitlement (Dth) 1/	Change from Pervious Year	% Change from Previous Year	% of Reserve Margin [(7)-(4)]/(4)]
2016-2017 Est (1/31)	7,482	839	14.34%	12,564	1,438	16.03%	13,359	850	8.80%	6.32%
2015-2016 (1/31)	6,643	791	13.52%	11,126	2,157	24.05%	12,509	2,850	29.51%	12.43%
2014-2015 (2/18)	5,852	547	10.31%	8,969	904	11.21%	9,659	300	3.21%	7.69%
2013-2014 (1/6)	5,305	531	11.12%	8,065	3,101	62.47%	9,359	4,150	79.67%	16.04%
2012-2013 (1/31)	4,774	558	13.24%	4,964	273	5.83%	5,209	165	3.27%	4.94%
2011-2012 (1/19)	4,216	319	8.19%	4,691	241	5.41%	5,044	-	0.00%	7.54%
2010-2011 (1/11)	3,897	175	4.70%	4,450 2/	239	5.66%	5,044	500	11.00%	13.35%
2009-2010 (1/10)	3,722	162	4.55%	4,211	(71)	-1.65%	4,544	300	7.07%	7.90%
2008-2009 (1/09)	3,560	182	5.39%	4,282	566	15.23%	4,244 3/	244	6.10%	-0.89%
2007-2008 (1/08)	3,378	170	5.30%	3,716	166	4.68%	4,000	350	9.59%	7.64%
2006-2007 (2/07)	3,208	237	7.98%	3,550	583	19.65%	3,650	350	10.61%	2.82%
2005-2006 (2/06)	2,971	290	10.82%	2,967	271	10.05%	3,300	300	10.00%	11.22%
2004-2005	2,681	336	14.33%	2,696	696	34.80%	3,000	600	25.00%	11.28%
2003-2004	2,345	181	8.36%	2,000	(200)	-9.09%	2,400	(200)	-7.69%	20.00%
2002-2003	2,164	300	16.09%	2,200	400	22.22%	2,600	400	18.18%	18.18%
2001-2002	1,864	301	19.26%	1,800	400	28.57%	2,200	500	29.41%	22.22%
2000-2001	1,563	393	33.59%	1,400	300	27.27%	1,700	300	21.43%	21.43%
1999-2000	1,170	279	31.31%	1,100	250	29.41%	1,400	150	12.00%	27.27%
1998-1999	891	289	48.01%	850	350	70.00%	1,250	750	150.00%	47.06%
1997-1998	602	339	128.90%	500	200	66.67%	500	200	66.67%	0.00%
1996-1997	263	263		300	300		300	300		
Average per Year:	2,406	264	23.12%	2,545	293	21.93%	2,824	315	24.62%	14.47%

	Firm Peak Day Send out						
	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Heating Season	Firm Peak Day Send out (Dth)	Change from Pervious Year	% Change from Previous Year	Excess per Customer [(7)-(4)]/(1)	Design Day per Customer (4)/(1)	Entitlement per Customer (7)/(1)	Peak Send out per Customer (11)/(1)
2016-2017	Unknown			0.106	1.6793	1.7855	Unknown
2015-2016	9,495	1,126	13.45%	0.208	1.6749	1.8830	1.4293
2014-2015	8,369	489	6.21%	0.118	1.5326	1.6505	1.4301
2013-2014	7,880	2,855	56.82%	0.244	1.5203	1.7642	1.4854
2012-2013	5,025	1,368	37.41%	0.051	1.0398	1.0911	1.0526
2011-2012	3,657	(248)	-6.35%	0.084	1.1126	1.1964	0.8674
2010-2011	3,905	251	6.87%	0.152	1.1419	1.2943	1.0021
2009-2010	3,654	(374)	-9.29%	0.089	1.1315	1.2208	0.9817
2008-2009	4,028	(72)	-1.75%	(0.011)	1.2028	1.1921	1.1315
2007-2008	4,100	550	15.49%	0.084	1.1001	1.1841	1.2137
2006-2007	3,550	738	26.24%	0.031	1.1066	1.1378	1.1066
2005-2006	2,812	285	11.28%	0.112	0.9987	1.1107	0.9465
2004-2005	2,527	185	7.90%	0.113	1.0056	1.1190	0.9426
2003-2004	2,342	587	33.45%	0.171	0.8529	1.0235	0.9987
2002-2003	1,755	747	74.11%	0.185	1.0166	1.2015	0.8110
2001-2002	1,008	(180)	-15.15%	0.215	0.9657	1.1803	0.5408
2000-2001	1,188	291	32.44%	0.192	0.8957	1.0877	0.7601
1999-2000	897	95	11.85%	0.256	0.9402	1.1966	0.7667
1998-1999	802	397	98.02%	0.449	0.9540	1.4029	0.9001
1997-1998	405	233	135.47%	-	0.8306	0.8306	0.6728
1996-1997	172	172		-	1.1407	1.1407	0.6540
Average per Year:	2,210	260	30.50%	0.133	1.0248	1.1574	0.8953

Notes:
1/ Total Entitlement = Total Contract Entitlement - Non-Recallable Capacity Release
2/ Reflects design day forecast method change to linear regression model.
3/ Adjusted to reflect 300 Dth not contracted as originally planned in Docket No. G022/M-08-1327.
4/ Reflects extraordinary send out due to temporary construction heat load.

Greater Minnesota Gas, Inc.
Design Day: Heating Season 2016 - 2017
Derivation of Design Day Use Per Customer

Linear Regression Analysis Period: January thru March 2016

Line No.	Customer Type	Weather Area	Non- Heat Sensitive (Y Intercept)	Use Per HDD (Slope)	Design HDD	Estimated Design Dths	Regression Coefficient	Equation
1	Residential	Minneapolis MN	133.55	61.61	90	5,678	0.9619	Y Inter + Slope x Design HDD = Estimated Design Dth
2	Firm Commercial	Minneapolis MN	273.32	57.50	90	5,448	0.9566	
			406.87	119.11				
5				**Total Design Dths**		**11,126**		
6				**Estimated Interruptible Load**		**0**		
7				**Net Design Dths**		**11,126**		Line 4 - Line 5
8				**Customer Count 1/2016**		**6,643**		
9				**Design Dths/Customer**		**1.6793**		Line 6 / Line 7
10				**Estimated Firm Customers for 2016/2017**		**7,482**		
11				**Design Dths 2016/2017**		**12,564**		Line 8 x Line 9

Greater Minnesota Gas, Inc.
Peak Day Analysis

Line No.	Description	Design Day Calculation	Peak Day 2015 -16	Peak Day 2014 -15	Peak Day 2013 -14	Peak Day 2012 -13
1	Date of Peak Day		1/17/2016	2/18/2015	1/6/2014	1/31/2013
2	Day of the Week		Sunday	Wednesday	Monday	Thursday
3	Total Throughput (Dth)	12564	9495	8464	7895	5038
4	Interruptible Customer Usage (Dth)	0	0	95	15	13
5	Firm Transportation Usage (Dth)	0	0	0	150	150
6	Firm Sales Throughput (Dth)	12564	9495	8369	7730	4875
7	Average Actual Gas Day Temperature (Deg. F)	-25	-8	-5	-17	-1
8	Heating Degree Days (HDD) 65 degree base	90	73	70	82	66
9	Non-HDD Sensitive Base (Dth)	407	407	321	180	-92
10	Total HDD Sensitive Firm Throughput (Dth)	12157	9088	8048	7550	4967
11	Actual Firm Peak Day Dth/HDD (Dth)	135	124	115	92	75
12	Base + (Actual Dth/HDD * HDDs) (Dth)	12564	9495	8369	7730	4875
13	Peak Month Firm Customers	7482	6643	5852	5305	4774
14	Peak Day Use per Firm Customer	1.679	1.429	1.430	1.457	1.021

Greater Minnesota Gas, Inc.
Contract Demand Entitlement Filing
Demand Profile

ATTACHMENT B
Demand Profile and Supply Comparison

2014 - 2015 Heating Season	Quantity (Dth)		2015 - 2016 Heating Season	Quantity (Dth)	Change in Quantity (Dth)		2016 - 2017 Heating Season	Quantity (Dth)
TF 12 (Nov. - Oct.)	**210**		**TF 12 (Nov. - Oct.)**	**210**	**-**		**TF 12 (Nov. - Oct.)**	**210**
TFX-7 (Oct. - Apr.)	**665**		**TFX-7 (Oct. - Apr.)**	**665**	**-**		**TFX-7 (Oct. - Apr.)**	**665**
TFX-5 (Nov. - Mar.)	**6,344**		**TFX-5 (Nov. - Mar.)**	**6,344**	**-**		**TFX-5 (Nov. - Mar.)**	**6,344**
TFX-5 (Nov. - Mar.)	**90**		**TFX-5 (Nov. - Mar.)**	**90**	**-**		**TFX-5 (Nov. - Mar.)**	**90**
Viking Forward Haul/Emerson	**1,400**	**(4)**	**Viking Forward Haul/Emerson**	**1,400**	**-**	**(4)**	**Viking Forward Haul/Emerson**	**1,400**
Viking Forward Haul/Emerson	**1,200**	**(5)**	**Viking Forward Haul/Emerson**	**1,200**	**-**	**(5)**	**Viking Forward Haul/Emerson**	**1,200**
						(8)	**Viking Forward Haul/Emerson**	**350**
			FT-A Capacity Release - Non-recallable	**2,600**	**2,600**		**FT-A Capacity Release - Non-recallabl**	**2,600**
Delivery Contract	**950**	**(6)**	**Delivery Contract**	**-**	**(950)**			
						(7)	**TF 12 (Nov. - Oct.)**	**500**
Viking Zone 1	2,000	**(2)**	Viking Zone 1	**2,000**		**(2)**	Viking Zone 1	2,000
TFX-1 (Purchased Oct. 2014)	1,000	**(3)**	TFX-1 (Purchased Oct. 2014)	**1,000**		**(3)**	TFX-1 (Purchased Oct. 2014)	1,000
SMS	2,000		SMS	2,000	**-**		SMS	2,000
Heating Season Total Capacity	10,859		Heating Season Total Capacity	12,509	1,650		Heating Season Total Capacity	13,359
Non-Heating Season Total Capacity	210		Non-Heating Season Total Capacity	210	-		Non-Heating Season Total Capacity	210
Total Entitlement @ Peak	10,859		Total Entitlement @ Peak	12,509	1,650		Total Entitlement @ Peak	13,359
Total Annual Transportation	-		Total Annual Transportation	-	-		Total Annual Transportation	-
Total Season Transportation	10,859		Total Season Transportation	12,509	1,650		Total Season Transportation	13,359
Total Percent Summer Vs. Winter	1.9%		Total Percent Summer Vs. Winter	1.7%			Total Percent Summer Vs. Winter	1.6%
Total Percent Seasonal	100.0%		Total Percent Seasonal	100.0%			Total Percent Seasonal	100.0%

Notes:

1/ Only items in bold affect capacity entitlement level.

2/ Transport only. Does not increase peak day entitlement.

3/ 1,000 Dth of TFX purchased for October, 2014 only to replace capacity loss due to Viking's Force Majeur. Does not affect peak day entitlement.

4/ 1,400 Dth disrupted in October, 2014 only due to Viking Force Majeur

5/ 1,200 Dth of FT-A purchased during Viking open season beginning February 1, 2015.

6/ Company has contract for supply delivered to TBS. No demand Charges are applicable, but the 950Dth's are available on peak day.

7/ Company has secured 500 DKT of release capacity in Northern Natural Gas Zone E-F effective July 1, 2016. The capacity is permanately releasedto GMG and non recallable. The capacity was available at Northern's existing tariff rate.

8/ Will be requested upon Commission approval for the capacity.

ATTACHMENT C
Contract Entitlement Changes

Greater Minnesota Gas, Inc.
Natural Gas Contract Summary
Contract Entitlement Changes as of June 1, 2016

Contract Entitlements 2015-16

Contract No.	Service Type	Rate Schedule	Months	Entitlement (Dth)	Expiration Date
102985	Firm Throughput	TFX - 5	Nov-Mar	3,000	3/31/2017
102985	Firm Throughput	TFX - 5	Nov-Mar	500	3/31/2018
102985	Firm Throughput	TFX - 5	Nov-Mar	500	3/31/2019
102985	Firm Throughput	TFX - 5	Nov-Mar	2,100	3/31/2020
102985	Firm Throughput	TFX - 5	Nov-Mar	244	3/31/2020
121534	Firm Throughput	TFX - 7	Oct-Apr	665	10/31/2020
120579	Firm Throughput	TF - 12	Oct-Sep	181	9/30/2017
120579	Firm Throughput	TF - 12	Oct-Sep	29	9/30/2017
120579	Firm Throughput	TFX - 5	Nov-Mar	90	9/30/2017
Viking Emerson	Forward Haul	FT-A	Nov-Oct	1,400	10/31/2018
Viking Emerson	Forward Haul	FT-A	Nov-Oct	1,200	1/31/2026
Viking RF1358	VGT WI Gas Release	FT-A	Nov-Oct	2,600	10/31/2017
		2014-15 Heating Season Total Capacity		12,509	
		2015-16 Design Day Demand		11,126	
		Reserve Margin		1,383	12.4%

Proposed Contract Entitlement Changes for 2016-17

Start Date	Contract No.	Service Type	Rate Schedule	Months	Entitlement (Dth)	Expiration Date
7/1/2016		Firm Throughput	TF - 12	12	500	10/31/2019
11/1/2016		Proposed New	FT- Zone 1	12	350	10/31/2021
		2016-17 Heating Season Total Capacity			13,359	
		2016-17 Design Day Demand			12,564	
		Reserve Margin			795	6.3%

Proposed Change in Contract Demand Costs

Contract No.	Rate Schedule	Volume Dth / Day	No. of Months	Monthly Demand Rates	Total Annual Cost
	TF - 12	500	7	$ 5.6830	$ 19,890.50
	TF - 12	500	5	$ 10.2300	$ 25,575.00
	FT- Zone 1	350	12	$ 4.3706	$ 18,356.52
					$ 63,822.02

ATTACHMENT D
Rate Impact of Proposed Contract Demand Entitlement

Greater Minnesota Gas, Inc.
Contract Demand Entitlement Filing
Rate Impact - November 2016

	Annualized Impact									
Residential	Last Rate Case 1/	Last Demand Change 2/	Current PGA w/o Demand Ent. Change (June 1, 2016)	Proposed Demand Entitlement Change	Change from Last Rate Case	% Change from Last Rate Case	Change from Last Demand Change	% Change from Last Demand Change	Change from Most Recent PGA	% Change from Most Recent PGA
Commodity Cost of Gas (WACOG)	$ 5.8801	$ 1.9527	$ 1.9527	$ 1.9527	$ (3.9274)	-66.79%	$ -	0.00%	$ -	0.00%
Demand Cost of Gas	$ 0.8293	$ 0.9139	$ 0.9139	$ 0.8525	$ 0.0232	2.80%	$ (0.0615)	-6.73%	$ (0.0615)	-6.73%
Total Cost of Gas	$ 6.7094	$ 2.8666	$ 2.8666	$ 2.8052	$ (3.9043)	-58.19%	$ (0.0615)	-2.14%	$ (0.0615)	-2.14%
Average Annual Usage (Dth)	68.0	68.0	68.0	68.0						
Average Annual Total Cost of Gas	$ 456.49	$ 195.04	$ 195.04	$ 190.85	$ (265.63)	-58.19%	$ (4.18)	-2.14%	$ (4.18)	-2.14%

	Annualized Impact									
Commercial & Industrial Firm	Last Rate Case 1/	Last Demand Change 2/	Current PGA w/o Demand Ent. Change (June 1, 2016)	Proposed Demand Entitlement Change	Change from Last Rate Case	% Change from Last Rate Case	Change from Last Demand Change	% Change from Last Demand Change	Change from Most Recent PGA	% Change from Most Recent PGA
Commodity Cost of Gas (WACOG)	$ 5.8801	$ 1.9527	$ 1.9527	$ 1.9527	$ (3.93)	-66.79%	$ -	0.00%	$ -	0.00%
Demand Cost of Gas	$ 0.8293	$ 0.9139	$ 0.9139	$ 0.8525	$ 0.02	2.80%	$ (0.0615)	-6.73%	$ (0.0615)	-6.73%
Total Cost of Gas	$ 6.7094	$ 2.8666	$ 2.8666	$ 2.8052	$ (3.90)	-58.19%	$ (0.0615)	-2.14%	$ (0.0615)	-2.14%
Average Annual Usage (Dth)	3,286.5	3,286.5	3,286.5	3,286.5						
Average Annual Total Cost of Gas	$ 22,050.62	$ 9,421.26	$ 9,421.26	$ 9,219.24	$ (12,831.39)	-58.19%	$ (202.02)	-2.14%	$ (202.02)	-2.14%

Notes:
1/ Docket Nos. G022/GR-09-962 & G022/MR-10-949
2/ Docket No. G022/M-10-1165 & G022/AA-10-1186

Greater Minnesota Gas, Inc.
Purchased Gas Adjustment (PGA) Calculation

Effective date of implementation: Natural gas usage on and after **June 1, 2016**

Reason for change: Change in cost of gas due to an estimated decrease in the market price of natural gas from May 2016.

This PGA is based on the following Northern Natural Gas Tariffs:
10th Revised Sheet No. 50
Issued: 2/1/2016
Effective: 4/1/2016
11th Revised Sheet No. 51
Issued: 2/1/2016
Effective: 4/1/16
1st Revised Sheet No. 55
Issued: 6/30/14
Effective: 9/30/14

This PGA is based on the following Viking Gas Transmission Co. Tariffs:
v.23.0.0 superseding v.22.0.0
Issued: 3/1/16
Effective: 04/01/16

I. Greater Minnesota Gas, Inc. - Base Cost of Gas — **November 1, 2010**
Approved in Docket No. G022/MR-10-949

		MCF	x Months	x Tariff Rate		Equals	Rate/CCF Firm	Rate/CCF Interruptible
All Customer Sales Rate Classes - Demand								
	TFX - 7	300	7	$5.6830		11,934	$0.002773	
	TFX-5	4,244	5	$15.1530		321,547	$0.074711	
	SMS Demand	50	7	$2.1800		763	$0.000177	
		1,300	8	$2.1800		22,672	$0.005268	
	Total Capacity Cost					$356,916		
	Rate Case 2009 Firm Sales Service Volume - CCF			4,303,890				
	Demand Base Cost of Gas / CCF						**$0.082929**	**$0.000000**
All Customer Sales Rate Classes - Commodity								
	All Classes Commodity					$ 2,808,142		
	Rate Case Total Sales Service Volume - CCF			4,775,650				
	Commodity Base Cost of Gas/CCF						**$0.588013**	**$0.588013**
	Total Base Cost of Gas/CCF					$3,165,058	**$0.670942**	**$0.588013**
Annual Sales Volume - 2009 Rate Case Sales Service Volume - CCF				**4,775,650**				
Sales Service Volume - CCF			4,303,890					
Interruptible Service Volume - CCF			471,760					

II. Greater Minnesota Gas, Inc. Rates - Current Cost of Gas Effective — **June 1, 2016**

	Commodity Cost of Gas					$0.195270	WACOG	

III. Annual Sales Volume - 2015-2016 Budget (September - August) — **11,892,800**

Sales Service Volume - CCF			**10,775,800**					
Interruptible Service Volume - CCF			**1,117,000**					

IV. Greater Minnesota Gas, Inc.'s -- Current Cost of Gas Effective — **June 1, 2016**

		MCF	x Months	x Tariff Rate		Equals	Rate/CCF Firm	Rate/CCF Ag Interr	Rate/CCF Gen Interr
All Customer Sales Rate Classes									
	Viking Zone 1	2,000	12	$4.3706		104,894	$0.009734		
	Viking Zone 1	1,400	12	$4.3706		73,426	$0.006814		
	Viking Zone 1	1,200	12	$4.3706		62,937	$0.005841		
	Viking Zone 1-2	2,600	12	$5.7394		179,069	$0.016618		
	TFX - 5	6,344	5	$15.1530		480,653	$0.044605		
	TF - 12	210	5	$10.2300		10,742	$0.000997		
	TF - 12	210	7	$5.6830		8,354	$0.000775		
	TF - 5	90	5	$15.1530		6,819	$0.000633		
	TFX - 7	665	5	$15.1530		50,384	$0.004676		
	TFX - 7	665	2	$5.6830		7,558	$0.000701		
						0	$0.000000		
	Current Demand Cost of Gas					$984,836	**$0.091394**	**$0.000000**	**$0.000000**
	Current Commodity Cost of Gas/CCF			% of Total	70%	**$2,322,307**	**$0.195270**	**$0.195270**	**$0.195270**
	Total Cost of Gas/CCF					**$3,307,143**	**$0.286664**	**$0.195270**	**$0.195270**

Summary of Cost
All Customer Sales Rate Classes (/CCF)

	Firm Sales				Agricultural Interruptible				General Interruptible			
	Total Demand	Total Commodity	True-up	**Total**	Total Demand	Total Commodity	True-up	**Total**	Total Demand	Total Commodity	True-up	**Total**
1) Base Rate	$0.082929	$0.588013	$0.000000	**$0.670942**	$0.000000	$0.588013	$0.000000	**$0.588013**	$0.000000	$0.588013	$0.000000	**$0.588013**
2) Prior PGA	$0.008465	($0.387713)	($0.004770)	**($0.384018)**	$0.000000	($0.387713)	$0.021340	**($0.366373)**	$0.000000	($0.387713)	$0.000400	**($0.387313)**
3) Current Adj	$0.000000	($0.005030)	$0.000000	**($0.005030)**	$0.000000	($0.005030)	$0.000000	**($0.005030)**	$0.000000	($0.005030)	$0.000000	**($0.005030)**
4) PGA Billed (2+3)	$0.008465	($0.392743)	($0.004770)	**($0.389048)**	$0.000000	($0.392743)	$0.021340	**($0.371403)**	$0.000000	($0.392743)	$0.000400	**($0.392343)**
5) Average Cost of Gas	$0.091394	$0.195270	($0.004770)	**$0.281894**	$0.000000	$0.195270	$0.021340	**$0.216610**	$0.000000	$0.195270	$0.000400	**$0.195670**

	Prior Cumulative Adjustments	Demand & Commodity Change Filed Herein	True-up Adjustment Factor Change Eff. September 1, 2015 (G022/AA-15-___)	Current PGA Adjustment
All Firm Sales Rate Classes (/CCF)	($0.379248)	($0.005030)	($0.004770)	**($0.389048)**
Ag Inter. Sales Rate Classes (/CCF)	($0.387713)	($0.005030)	$0.021340	**($0.371403)**
Gen. Inter. Sales Rate Classes (/CCF)	($0.387713)	($0.005030)	$0.000400	**($0.392343)**

		1	2	3	4	5	7
June 1, 2016	Tariff Rate Designation	Non-gas Commodity Margin ($/CCF)	Commodity Cost ($/CCF)	Demand Other PGA Expenses ($/CCF)	Total Cost of Gas ($/CCF) (2)+(3)+(4)	True-up Factor ($/CCF)	Total Billing Rate ($/CCF)
Rate Class							
Residential	RS1	$0.444330	$0.195270	$0.091394	$0.286664	($0.004770)	$0.726224
Small Commercial CS1	SCS1	$0.426330	$0.195270	$0.091394	$0.286664	($0.004770)	$0.708224
Commercial CS1	CS1	$0.396330	$0.195270	$0.091394	$0.286664	($0.004770)	$0.678224
Commercial/Industrial MS1	MS1	$0.376330	$0.195270	$0.091394	$0.286664	($0.004770)	$0.658224
Commercial/Industrial LS1	LS1	$0.361330	$0.195270	$0.091394	$0.286664	($0.004770)	$0.643224
Agricultural - Interruptible	AG1	$0.231310	$0.195270	$0.000000	$0.195270	$0.021340	$0.447920
General Interruptible	IND1	$0.251310	$0.195270	$0.000000	$0.195270	$0.000400	$0.446980
General Interruptible - Flex	IND1 - FL	$0.030000	$0.195270	$0.000000	$0.195270	$0.000400	$0.225670

Estimated Gas Volumes April 2016 487,780 Ccf

FOR ILLUSTRATIVE PURPOSES ONLY

Greater Minnesota Gas, Inc.
Purchased Gas Adjustment (PGA) Calculation

Effective date of implementation: Natural gas usage on and after **November 1, 2016**

This PGA is based on the following Northern Natural Gas Tariffs:
7th Revised Sheet No. 50
Issued: 1/31/14
Effective: 4/1/14
8th Revised Sheet No. 51
Issued: 12/04/14
Effective: 01/06/2015
1st Revised Sheet No. 55
Issued: 6/30/14
Effective: 9/30/14

This PGA is based on the following Viking Gas Transmission Co. Tariffs:
v.21.0.0 superseding v.20.0.0
Issued: 11/14/14
Effective: 01/01/15

I. Greater Minnesota Gas, Inc. - Base Cost of Gas — **November 1, 2010**
Approved in Docket No. G022/MR-10-949

All Customer Sales Rate Classes - Demand		MCF	x Months	x Tariff Rate	Equals	Rate/CCF Firm	Rate/CCF Interruptible
	TFX - 7	300	7	$5.6830	11,934	$0.002773	
	TFX-5	4,244	5	$15.1530	321,547	$0.074711	
	SMS Demand	50	7	$2.1800	763	$0.000177	
		1,300	8	$2.1800	22,672	$0.005268	
	Total Capacity Cost				$356,916		
	Rate Case 2009 Firm Sales Service Volume - CCF			4,303,890			
	Demand Base Cost of Gas / CCF					**$0.082929**	**$0.000000**
All Customer Sales Rate Classes - Commodity							
	All Classes Commodity				$ 2,808,142		
	Rate Case Total Sales Service Volume - CCF			4,775,650			
	Commodity Base Cost of Gas/CCF					**$0.588013**	**$0.588013**
	Total Base Cost of Gas/CCF				$3,165,058	**$0.670942**	**$0.588013**

Annual Sales Volume - 2009 Rate Case Sales Service Volume - CCF		**4,775,650**
Sales Service Volume - CCF	4,303,890	
Interruptible Service Volume - CCF	471,760	

II. Greater Minnesota Gas, Inc. Rates - Current Cost of Gas Effective — **November 1, 2016**

Commodity Cost of Gas	$0.195270	WACOG

III. Annual Sales Volume - 2016-2017 Budget (September - August) Adjusted for growth in sales for 2016-2017 — **13,830,000**

Sales Service Volume - CCF	**12,301,500**
Interruptible Service Volume - CCF	**1,528,500**

IV. Greater Minnesota Gas, Inc.'s -- Current Cost of Gas Effective — **November 1, 2016**

All Customer Sales Rate Classes		MCF	x Months	x Tariff Rate		Equals	Rate/CCF Firm	Rate/CCF Ag Interr	Rate/CCF Gen Interr
	Viking Zone 1	2,000	12	$4.3706		104,894	$0.008527		
	Viking Zone 1	1,400	12	$4.3706		73,426	$0.005969		
	Viking Zone 1	1,200	12	$4.3706		62,937	$0.005116		
	TFX - 5	6,344	5	$15.1530		480,653	$0.039073		
	TF - 12	181	5	$10.2300		9,258	$0.000753		
	TF - 12	181	7	$5.6830		7,200	$0.000585		
	TF - 12	29	5	$10.2300		1,483	$0.000121		
	TF - 12	29	7	$5.6830		1,154	$0.000094		
	TF - 5	90	5	$15.1530		6,819	$0.000554		
	TFX - 7	665	5	$15.1530		50,384	$0.004096		
	TFX - 7	665	2	$5.6830		7,558	$0.000614		
	FT-A	2,600	12	$5.7394		179,069	$0.014557		
	TF - 12	500	5	$10.2300		25,575	$0.002079		
	TF - 12	500	7	$5.6830		19,891	$0.001617		
	Viking Zone 1	350	12	$4.3706		18,357	$0.001492		
	Current Demand Cost of Gas					$1,048,658	**$0.085247**	**$0.000000**	**$0.000000**
	Current Commodity Cost of Gas/CCF			% of Total	72%	**$2,700,584**	**$0.195270**	**$0.195270**	**$0.195270**
	Total Cost of Gas/CCF					**$3,749,242**	**$0.280517**	**$0.195270**	**$0.195270**

FOR ILLUSTRATIVE PURPOSES ONLY

Summary of Cost
All Customer Sales Rate Classes (/CCF)

	Firm Sales				Agricultural Interruptible				General Interruptible			
	Total Demand	Total Commodity	True-up	**Total**	Total Demand	Total Commodity	True-up	**Total**	Total Demand	Total Commodity	True-up	**Total**
1) Base Rate	$0.082929	$0.588013	$0.000000	**$0.670942**	$0.000000	$0.588013	$0.000000	**$0.588013**	$0.000000	$0.588013	$0.000000	**$0.588013**
2) Prior PGA	$0.008465	($0.387713)	($0.004770)	**($0.384018)**	$0.000000	($0.387713)	$0.021340	**($0.366373)**	$0.000000	($0.387713)	$0.000400	**($0.387313)**
3) Current Adj	($0.006147)	($0.005030)	$0.000000	**($0.011177)**	$0.000000	($0.005030)	$0.000000	**($0.005030)**	$0.000000	($0.005030)	$0.000000	**($0.005030)**
4) PGA Billed (2+3)	$0.002318	($0.392743)	($0.004770)	**($0.395195)**	$0.000000	($0.392743)	$0.021340	**($0.371403)**	$0.000000	($0.392743)	$0.000400	**($0.392343)**
5) Average Cost of Gas	$0.085247	$0.195270	($0.004770)	**$0.275747**	$0.000000	$0.195270	$0.021340	**$0.216610**	$0.000000	$0.195270	$0.000400	**$0.195670**

	Prior Cumulative Adjustments	Demand & Commodity Change Filed Herein	True-up Adjustment Factor Change Eff. September 1, 2014 (G022/AA-14-___)	Current PGA Adjustment
All Firm Sales Rate Classes (/CCF)	($0.379248)	($0.011177)	($0.004770)	**($0.395195)**
Ag Inter. Sales Rate Classes (/CCF)	($0.387713)	($0.005030)	$0.021340	**($0.371403)**
Gen. Inter. Sales Rate Classes (/CCF)	($0.387713)	($0.005030)	$0.000400	**($0.392343)**

		1	2	3	4	5	7
November 1, 2016	Tariff Rate Designation	Non-gas Commodity Margin ($/CCF)	Commodity Cost ($/CCF)	Demand Other PGA Expenses ($/CCF)	Total Cost of Gas ($/CCF) (2)+(3)+(4)	True-up Factor ($/CCF)	Total Billing Rate ($/CCF)
Rate Class							
Residential	RS1	$0.444330	$0.195270	$0.085247	$0.280517	($0.004770)	$0.720077
Small Commercial CS1	SCS1	$0.426330	$0.195270	$0.085247	$0.280517	($0.004770)	$0.702077
Commercial CS1	CS1	$0.396330	$0.195270	$0.085247	$0.280517	($0.004770)	$0.672077
Commercial/Industrial MS1	MS1	$0.376330	$0.195270	$0.085247	$0.280517	($0.004770)	$0.652077
Commercial/Industrial LS1	LS1	$0.361330	$0.195270	$0.085247	$0.280517	($0.004770)	$0.637077
Agricultural - Interruptible	AG1	$0.231310	$0.195270	$0.000000	$0.195270	$0.021340	$0.447920
General Interruptible	IND1	$0.251310	$0.195270	$0.000000	$0.195270	$0.000400	$0.446980
General Interruptible - Flex	IND1 - FL	$0.030000	$0.195270	$0.000000	$0.195270	$0.000400	$0.225670