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November 1, 2012

VIA ELECTRONIC FILING

Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 Seventh Place East, Suite 350
St. Paul, MN 55101

Re: In the Matter of the Petition of Minnesota Energy Resources Corporation
(MERC)–NMU for Approval of a Change in Demand Entitlement
Docket No. G007/M-12-____

Dear Dr. Haar:

In accordance with Minnesota Rule 7825.2910, subpart 2, please find the public and nonpublic versions of Minnesota Energy Resources Corporation's (MERC) request to change demand entitlement.

Please note that Attachments 5 and 9 contain financial information with independent economic value that is not generally known to, and not readily ascertainable by, competitors of MERC, who could obtain economic value from its disclosure. MERC maintains this information as secret. Accordingly this data qualifies as trade secret data as defined in Minn. Stat. § 13.37, subd. 1(b), and MERC requests that the data be treated as trade secret information.

In accordance with Minnesota Rule 7825.2910, subpart 3, a Notice of Availability has been sent to all intervenors in the Company's previous two rate cases.

Please feel free to contact me at (612) 340-2881 if you have any questions regarding this matter.

Sincerely yours,

/s/ Michael J. Ahern

Michael J. Ahern

cc: Service List

November 1, 2012

To: Service List

RE: Minnesota Energy Resources Corporation-NMU Petition for Approval of Change in Demand Entitlement

Notice of Availability

Please take notice that Minnesota Energy Resources Corporation-NMU has filed a petition with the Minnesota Public Utilities Commission for approval of a change in demand entitlement.

To obtain copies, or if you have any questions, please contact:

Gregory J. Walters
Minnesota Energy Resources Corporation
3460 Technology Drive NW
Rochester, MN 55901
507-529-5100.

Please note that this filing is also available through the eDockets system maintained by the Minnesota Department of Commerce and the Minnesota Public Utilities Commission. You can access this document by going to eDockets through the websites of the Department of Commerce or the Public Utilities Commission or going to the eDockets homepage at:

<https://www.edockets.state.mn.us/EFiling/home.jsp>

Once on the eDockets homepage, this document can be accessed through the Search Documents link and by entering the date of the filing.

STATE OF MINNESOTA
BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger
J. Dennis O'Brien
David C. Boyd
Phyllis A. Reha
Betsy Wergin

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of the Petition of Minnesota)
Energy Resources Corporation – NMU)
for Approval of a Change in Demand)
Entitlement)

Docket No. _____

SUMMARY OF FILING

Pursuant to Minnesota Rule 7825.2910, subpart 2 (Filing Upon Change in Demand), Minnesota Energy Resources Corporation-NMU (MERC or the Company), hereby petitions the Minnesota Public Utilities Commission (Commission) for approval of changes in demand entitlements for MERC-NMU's customers. MERC requests that the Commission approve the requested changes to be recovered in the Purchased Gas Adjustment (PGA) effective on November 1, 2012.

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In the Matter of the Petition of Minnesota	)	
Energy Resources Corporation – NMU	)	
for Approval of a Change in Demand	)	Docket No. _____
Entitlement	)	

FILING UPON CHANGE IN DEMAND

Pursuant to Minnesota Rule 7825.2910, subpart 2 (Filing Upon Change in Demand), Minnesota Energy Resources Corporation-NMU (MERC or the Company), hereby petitions the Minnesota Public Utilities Commission (Commission) for approval of changes in demand entitlements for MERC-NMU's customers. MERC requests that the Commission approve the requested changes to be recovered in the Purchased Gas Adjustment (PGA) effective on November 1, 2012.

This filing includes the following attachments:

- | | |
|----------------------|---|
| Attachment 1: | Notice of Availability. |
| Attachment 2: | One paragraph summary of the filing in accordance with Minn. R. 7829.1300, subp. 1. |
| Attachment 3: | Petition for Change in Demand with Attachments. |
| Attachment 4: | Affidavit of Service and Service List. |

The following information is provided in accordance with Minn. R. 7829.1300:

1. Summary of Filing

Pursuant to Minn. R. 7829.1300, subp. 1, a one-paragraph summary of the filing is attached.

2. Service

Pursuant to Minn. R. 7829.1300, subp. 2, MERC has served a copy of this filing on the Department of Commerce and the Office of the Attorney General – Residential Utilities Division. The summary of the filing has been served on all parties on the attached service list. Additionally, pursuant to Minn. R. 7825.2910, subp. 3, a Notice of Availability has been sent to all intervenors in the Company's previous two rate cases.

3. General Filing Information

A. Name, Address, and Telephone Number of the Utility

Minnesota Energy Resources Corporation
2665 145th Street West
Box 455
Rosemount, MN 55068-0455
(651) 322-8901

B. Name, Address, and Telephone Number of Attorney for the Utility

Michael J. Ahern
Dorsey & Whitney LLP
50 S. Sixth Street, Suite 1500
Minneapolis, MN 55402-1498
(612) 340-2881

C. Date of the Filing and Proposed Effective Date

Date of filing: November 1, 2012
Proposed Effective Date: November 1, 2012

D. Statute Controlling Schedule for Processing the Filing

Minnesota Statutes and related rules do not provide an explicit time frame for action by

the Commission. Under Minn. R. 7829.1400, initial comments are due within 30 days of filing, with reply comments due 10 days thereafter.

E. Utility Employee Responsible for the Filing

Gregory J. Walters
3460 Technology Drive NW
Rochester, MN 55901
(507) 529-5100

If additional information is required, please contact Michael J. Ahern at: (612) 340-2881.

DATED: November 1, 2012

Respectfully Submitted,

DORSEY & WHITNEY LLP

By: /s/ Michael J. Ahern

Michael J. Ahern
Suite 1500, 50 South Sixth Street
Minneapolis, MN 55402-1498
Telephone: (612) 340-2600

Attorney for Minnesota Energy
Resources Corporation

STATE OF MINNESOTA
BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger	Chair
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In the Matter of the Petition of	)	
Minnesota Energy Resources	)	
Corporation – NMU for Approval of a	)	Docket No. G007/M-12-
Change in Demand Entitlement	)	

PETITION FOR CHANGE IN DEMAND

I. INTRODUCTION

Pursuant to Minnesota Rule 7825.2910, subpart 2 (Filing Upon Change in Demand), Minnesota Energy Resources Corporation - NMU (MERC or the Company), a division of Integrys Energy Group, Inc. (TEG), hereby petitions the Minnesota Public Utilities Commission (Commission) approve changes in demand entitlements for MERC-NMU's customers. MERC requests that the Commission approve the requested changes to be recovered in the Purchased Gas Adjustment (PGA) effective on November 1, 2012.

II. DISCUSSION

A. MERC's NMU Design Day Requirements

MERC's 2012-2013 NMU design day requirements increased 2,276 Mcf (or approximately 3.92 percent) from 57,989 Mcf to 60,265 Mcf.

**Table 1: MERC's Proposed Reserve Margins
For the 2012-2013 Heating Season
NMU (NNG, GLGT, VGT & Centra)**

	Reserve Margin 2012-2013 Heating Season	Reserve Margin 2011-2012 Heating Season	Change
NNG Zone E-F	5.12%	7.09%	-1.97%

As shown in Table 1 and Attachment 3, MERC's proposed system wide reserve margin for NMU for the 2012-2013 heating season is positive.

For the Demand Entitlement filing effective November 1, 2012, the total Design Day requirement for Northern Natural Gas (NNG), which includes PNG and NMU is 225,788 Dth as calculated in Attachment 5 and Attachment 7 under the NNG-PNG Entitlement Allocation.

For the Demand Entitlement filing effective November 1, 2012, the total Design Day capacity on Northern Natural Gas (NNG), which includes PNG and NMU is 233,485 Dth as calculated in Attachment 5 and Attachment 7 under the NNG-PNG Entitlement Allocation.

The difference between the total Design Day requirement and total Design Day capacity results in a 3.41% positive reserve margin.

On NNG, Demand Entitlement decreased primarily due to not purchasing a NNG Zone Delivery Call Option (12,500 Dth), which was part of the portfolio in 2011/12. NNG, Bison and NBPL capacity is allocated between PNG and NMU based on a prorated share based on design day numbers. PNG prorated percentage of NNG capacity is approximately 88.93% and NMU's prorated percentage is approximately 11.07%. Due

to the proration, there was a decrease of 2,194 Dth in PNG-NNG winter capacity, 477 Dth decrease in PNG-NNG Bison and NBPL capacity. Please see Attachments 5 and 8 for calculated volumes by month.

For the Demand Entitlement filing effective November 1, 2012, the total Design Day requirement for NMU-Centra is 7,914 Mcf as calculated in Attachment 1, page 2 of 3.

For the Demand Entitlement filing effective November 1, 2012, the total Design Day capacity for NMU-Centra is 9,500 Mcf as calculated in Attachment 4, page 2 of 2.

The difference between the total Design Day requirement and total Design Day capacity results in a 20.04% positive reserve margin.

For the Demand Entitlement filing effective November 1, 2012, the total Design Day requirement for NMU-GLGT is 15,825 Dth as calculated in Attachment 1, page 2 of 3.

For the Demand Entitlement filing effective November 1, 2012, the total Design Day capacity for NMU-GLGT is 16,219 Mcf as calculated in Attachment 4, age 2 of 6.¹ The capacity is allocated between PNG and NMU on a prorated share based on design day numbers.

The difference between the total Design Day requirement and total Design Day capacity results in a 2.49% positive reserve margin.

For the Demand Entitlement filing effective November 1, 2012, the total Design Day requirement for NMU-VGT is 11,523 Dth as calculated in Attachment 1, page 2 of 3.

For the Demand Entitlement filing effective November 1, 2012, the total Design Day capacity for NMU-VGT is 11,862 Mcf as calculated in Attachment 4, page 2 of 6. The capacity is allocated between PNG and NMU on a prorated share based on design day numbers.

The difference between the total Design Day requirement and total Design Day capacity results in a 2.94% positive reserve margin.

B. Forecast Methodology for MERC Demand Entitlement Nov. 1, 2012

Peakday

Purpose

Gather data and perform analysis used in the “Petition for Change in Demand” for Minnesota Energy Resources Corporation – PNG and Minnesota Energy Resources Corporation – NMU for “Approval of a Change in Demand Entitlement” to be sent to the Minnesota Public Utilities Commission, otherwise known as the “MERC Demand Entitlement Filings”.

Background

MERC is composed of two service areas:

1. PNG - Peoples Natural Gas
2. NMU - Northern Minnesota Utility

Which are served by four pipelines:

3. VGT - Viking Gas Transmission system (serves both PNG and NMU)
4. NNG- Northern Natural Gas pipeline (serves both PNG and NMU)
5. GLGT - Great Lakes Gas Transmission pipeline (serves both PNG and NMU)

6. Centra - Centra pipeline (serves NMU)

Four Petitions for Change in Demand are filed (one for each of PGA):

- A. PNG customers served off of VGT = PNG-VGT
- B. PNG customers served off of GLGT = PNG-GLGT
- C. PNG customers served off of NNG = PNG-NNG
- D. All NMU customers - served off NNG, GLGT, VGT & Centra = NMU

Weather data is obtained from the following weather stations:

1. International Falls
2. Bemidji
3. Cloquet
4. Fargo
5. Minneapolis
6. Rochester
7. Worthington
8. Ortonville

For analytical purposes, data is subdivided, analyzed and regressed by the following demand areas:

	Demand Area (Service Area / Pipeline)	PGAC	Weather Station(s)
1	NMU-Centra	NMU	International Falls
2	NMU-GLGT *	NMU	Bemidji & Cloquet
3	NMU-NNG	NMU	Cloquet
4	NMU-VGT *	NMU	Fargo
5	NMU-GLGT&VGT*	NMU	Bemidji
6	PNG-GLGT	PNG-GLGT	Bemidji
7a	PNG-NNG – All except	PNG-NNG	Minneapolis, Rochester, Cloquet &

	Ortonville		Worthington
7b	PNG-NNG – Ortonville Only	PNG-NNG	Ortonville
8	PNG-VGT	PNG-VGT	Fargo

* Thief River Falls is included only in NMU-GLGT&VGT

Analytical Approach

Summary

1. Obtain daily weather data for each weather station as shown in Attachment 13
2. Obtain daily total throughput volumes by pipeline
3. Perform total throughput peak day regressions
4. Subtract interruptible, transport, and joint interruptible expected peak day load volumes based on monthly billing data
5. Add back Daily Firm Capacity (DFC) customer selections
6. Apply sales forecast growth rates

Detail

The Peak Day Forecasting Team (the Team) followed a data-driven approach for the MERC Peak Day Forecast. Since the forecast is for a peak day, the best daily data available is required to provide the best estimate. Theoretically, the peak day regression should be performed using daily net firm load by service area, pipeline, and weather station. A review of the data available indicated that the two best daily data sources are the daily weather data by weather station and the daily throughput data by Town Border Station (TBS) and pipeline meter. (Some pipeline meters are dedicated to a TBS, and some are dedicated to individual customers.)

Most of the interruptible, transportation, and joint interruptible data available is from monthly billing record excerpts provided by ADS/Vertex, an external vendor that has been providing billing services to MERC-PNG and MERC-NMU.

The Team followed an approach generally consistent with the one used last year that would:

- Make the best use of the best available data; and
- Isolate the effects the monthly billing cycle data has on the Peak Day forecast so that the new process can be easily updated as better data is available.

The Peak Day Process consisted of:

- I. Data Preparation
- II. Regression Generation of Net Daily Metered Volumes
- III. Volume Risk Adjustments
- IV. Adjusting the Regression Results to a Firm peak day estimate

I. The **Data Preparation** Steps consisted of:

- Identify the coldest Adjusted Heating Degree Day (AHDD65) in the last 20 years for each weather station.
- Determine the most recent three years of December through February daily total metered throughput for each of the demand areas by weather station.
- Subtract the daily pipeline meter readings for all non-firm customers with daily pipeline meter readings available for all three December through February years from the total throughput for each demand area and weather station. Use the resulting net daily metered volumes for regressions. Examples of non-firm customer meter readings subtracted from the demand area total daily throughputs are paper mills, direct-connects, taconites, and off-system end users. (See “Adjusting the Regression Results to a Firm Peak Day Estimate” below.)
- Determine how to map the monthly billing data to the demand areas.

Each daily weather station data file was searched to find the coldest Adjusted Heating Degree Day (AHDD65) in the last 20 years. This 1-in-20 approach is consistent with prior years. The results are provided in the following table:

<u>Station</u>	<u>Date</u>	<u>Avg. Temp</u>	<u>Avg. Wind</u>	<u>HDD65</u>	<u>AHDD65</u>
Bemidji	2/1/1996	-34	8	99	107
Cloquet	2/2/1996	-31	7	96	103
Fargo	1/18/1996	-16	34	81	109
International Falls	2/2/1996	-34	8	99	107
Minneapolis	2/2/1996	-25	8	90	97
Rochester	2/2/1996	-27	10	92	101
Worthington	1/18/1996	-8	32	73	96
Ortonville	1/14/2009	-21	11	86	96

The daily throughput data was provided by pipeline and meter, with each meter on each pipeline mapped to one of the weather stations shown in the above chart. Each meter was also designated as either PNG or NMU. As noted above, some of the meters represented a TBS. Some meters were dedicated to a customer who is not a firm service customer of either PNG or NMU. For example, certain transportation, interruptible, direct-connect, and taconite customers have their own meter, but are not counted as firm service customers.

In a more nearly ideal world, the Team would have also had daily telemetered data from each interruptible, transportation, and joint interruptible customer mapped to each of the demand areas and related weather stations. This was the case for a handful of paper mills, direct-connects, taconites, and off-system end users. The rest of the interruptible, transportation, and joint interruptible data was available based on monthly billing cycle data that introduces billing lag, meter read lag (not all meters were read every month, resulting in billing cycle estimates and reversals), and other potential errors into their volumes.

Similar to the process used the prior year, the Team generated regressions of the daily throughput data available less the known daily meter readings for non-firm customers and adjusted those regressions for the estimated peak day impact of the other non-firm customers who do not have daily readings. This approach was used because it introduced much less error into the data and regressions than trying to guess how to allocate monthly billing cycle data to daily when the load factors and relative temperature sensitivity of the non-daily-metered customers was not known. Using only the daily metered data for the regressions makes the best use of the best data available and provides insights into the total daily metered load that could be active on a peak day even if supply access at the non-firm pipeline meters were shut off.

II. The **Regression Generation of Net Daily Metered Volumes** consisted of:

- For each of the Demand Areas (Service Area / Pipeline):
 1. Gather the net daily metered volumes and weather station data including AHDD65².
 2. If more than one weather station is represented in a given demand area, weight each weather station's AHDD65 by the total December through February metered volumes attributable to that weather station.
 3. Add indicator variables for day-type and month. Day-type variables are used to isolate load that changes by day of the week, such as commercial or industrial customers who may change their consumption on weekends when they run fewer

² Temperature and weather data was obtained from Weather Bank/DTN via TherMaxx then converted to HDD65 and AHDD65 in an Excel spreadsheet by MERC – Gas Supply. Temperature and wind data is 24-hour average based on the 9am to 9am gas day.

shifts. Month indicator variables are used to isolate load that changes based on winter month, such as businesses that are open extra hours in December and resume normal operating hours in January.

4. Perform ordinary least squares linear regressions for the 3-year time frame using the AHDD65 weather variable and the significant indicator variables.
5. Summarize the Baseload and Use/AHDD65 from each regression.
6. Calculate a point estimate from each regression based on the baseload value plus the Use/AHDD65 coefficient times the coldest AHDD65 in 20 years (volume weighted if using more than one weather station in a single Demand Area).

III. Volume Risk Adjustments

Volume risk adjustments were incorporated into the forecast to provide a confidence level that the daily metered load under design conditions would not exceed the daily metered regression estimate. An appropriate volume risk adjustment was determined for each regression group by multiplying the standard error of each regression analysis (sigma) by a factor needed to attain a desired confidence level. The desired confidence level chosen was 97.5%.

IV. Adjusting the Regression Results to a Firm Peak Day Estimate consisted of:

A. Subtract interruptible, transport, and joint interruptible expected peak day load volumes based on monthly billing data

In order to determine firm peak day load, volumes contained in the daily pipeline meter readings for interruptible, joint interruptible and transportation customers needed to be isolated and removed. While it would have been ideal to have daily billing data for all customers, most

of the interruptible, transportation, and joint interruptible data was, in most cases, only available from monthly billing records³. An unfortunate, but unavoidable consequence was that this data was based on monthly billing cycles that introduce billing lag, meter read lag (not all meters were read every month, resulting in billing cycle estimates and reversals), and other potential errors into their volumes.

A database of volumes billed for all customers from the prior winter was obtained. The database contained detail by customer class⁴, calendar month, (service) area, city, location, zip code and responsibility center. The billing database was provided by ADS/Vertex, an outside firm that has been providing billing services to MERC. Sales and Revenue Forecasting had previously adjusted the billing data to properly fit the appropriate calendar month of consumption by apportioning billed volumes, i.e., for a bill covering February 15 to March 15, volumes were split evenly between February and March.

Volumes for the interruptible, transportation and joint interruptible customer classes (INTER, TRANS and JINTER classes) needed to be mapped to the appropriate regression demand area, and were then summed. This billing data included consumption that was billed, but not included in the daily metered volumes for several large specific customers (paper mills, direct-connects, taconites, and off-system end users), and therefore needed to be removed from the gross interruptible, transportation and joint interruptible totals. Such customers were identified, mapped to the demand areas, summed and subtracted from the interruptible, transportation and joint interruptible customer classes totals. The following peak demand estimation method based

³ Individual daily volumes were available for a handful of paper mills, direct-connects, taconites, and off-system end users.

⁴ Transportation, Interruptible, Joint Interruptible, Residential, Large Commercial & Industrial and Small Commercial & Industrial.

on the highest monthly total from the prior winter was then used to calculate the amount to subtract from the results of the data regressions for each demand area:

The MERC-PNG and MERC-NMU tariff General Rules, Regulations, Terms, and Conditions Section 1.N “Maximum Daily Quantity (MDQ)” on 1st Revised Sheet No. 8.04:

N. Maximum Daily Quantity (MDQ):

The amount calculated by dividing the volumes consumed by a particular customer during the highest historical peak month of usage for that customer by twenty (20).

Company will estimate a peak month for new customers. A Maximum Daily Quantity may also be established through direct measurement or other means (i.e. estimating the peak day requirements after installation of new processing equipment or more energy efficient heating systems) if approved by [the] Company.

B. Add back Daily Firm Capacity (DFC) customer selections

While interruptible, joint interruptible and transportation customer volumes were removed (as described above), in order to determine firm peak day load, daily firm capacity selections needed to be added back. The Sales and Revenue Forecasting department provided historical monthly DFC data for the “joint interruptible” customers from the prior winter that showed the volume that each customer has selected to receive as firm service from MERC each month. Based on direction from MERC Gas Supply, the Small Volume Joint Firm / Interruptible customers who were relying on MERC to provide peak day firm supply were identified and their the daily firm capacity volumes were summed by month for each demand area. The total volumes were then added back to the adjusted regression results.

C. Apply Sales Forecast Growth Rates

The throughput volumes used in the data regressions were from the last three winters and needed to be adjusted to properly forecast the next year. The Revenue Forecasting Department provided a growth rate for each demand area, which were then applied to the adjusted regression results.

Demand Area / (Service Area / Pipeline) Regression Notes

A. Interruptible, Transportation and Joint Interruptible

NMU-GLGT = Paper Mills

NMU-VGT = Lamb Weston

PNG-NNG = Taconites / Direct Connects

PNG-NNG = OSEU (End Users)

B. Daily Firm Capacity

PNG-VGT

PNG-GLGT

PNG-NNG

Daily Design Day Estimate to Actual Comparison

In the 2007 demand entitlement dockets, MERC agreed to include a daily estimate utilizing the design day model which is calculated in Attachment 11, pages 1 through 4. The daily estimate is compared to actual consumption. The actual volumes are total through-put which includes interruptible and transportation volumes that are located behind MERC citygates.

This does not include any transportation volumes that are directly connected with any interstate pipeline(s). The Design Day model only calculates firm volumes. MERC does not forecast on a daily/monthly basis utilizing the Design Day model. The Design Day model is utilized to calculate the theoretical peak day. The calculated base load natural gas usage at zero heating degree days is 6,414 Dth which includes interruptible and transportation volumes. Since daily volume consumption is not available for all interruptible and transportation customers, MERC is not able to determine an exact number to deduct from the 6,414 Dth to determine the firm base load natural gas consumption at zero (0) HDD.

Average Customer Counts

In the 2007 demand entitlement dockets, MERC agreed to include average customer counts which is provided in Attachment 12.

C. MERC's Specific NMU Proposed Demand-Related Changes

There are two types of demand entitlement changes. The first type is design day deliverability, which, in this case, increases the amount of firm transportation and storage capacity actually available to MERC's NMU customers during winter peak periods. The second type does not affect design day deliverability levels, but alters the capacity portfolio and the PGA costs recovered from customers.

1. Design Day Deliverability Changes

As shown in Attachment 3, MERC-NMU proposes to increase its approved NNG total heating season entitlement by 928 Mcf/day (or approximately 3.78 percent). To obtain the proposed entitlement level, the Company proposes changes to its portfolio of capacity services identified below in Table 4.

Demand Entitlement decrease was due to not purchasing a NNG Zone Delivery Call Option (1,265 Dth). NNG, Bison and NBPL capacity is allocated between PNG and NMU based on a prorated share based on design day numbers. PNG prorated percentage of NNG capacity is approximately 88.93% and NMU's prorated percentage is approximately 11.07%. Due to the proration, there was an increase of 2,193 Dth in NMU-NNG winter capacity and a 477 Dth increase in NMU Bison and NBPL capacity.

Capacity on GLGT is allocated between NMU and PNG-GLGT based on prorated share calculated by design day numbers. Due to the proration, there was a decrease of 63 Dth in NMU-GLGT winter capacity.

MERC was not able to purchase firm winter only (November 2012 through March 2013) from VGT, so MERC purchased a Wadena Delivered Call Option. Capacity on VGT was allocated between NMU and PNG-VGT based on prorated share calculated by design day numbers. Due to the Wadena Delivered Call Option purchase and allocation factor change, VGT capacity on NMU was increased by 387 volumes.

There was no change in Centra firm entitlement.

Table 4

Capacity Entitlement	Propose Change Increase / (Decrease)
NNG TF12B & TF12V	718 Mcf/Day
NNG TF5	307 Mcf/Day
NNG TFX12	308 Mcf/Day
NNG TFX5	860 Mcf/Day
Bison *	477 Mcf/Day
NBPL *	477 Mcf/Day
NNG Zone GDD Call Option	(1,265) Mcf/Day
NNG Subtotal	928 Mcf/Day
GLGT FT0016	(24) Mcf/Day
GLGT FT0155 (12)	(8) Mcf/Day
GLGT FT0155 (5)	(9) Mcf/Day
GLGT FT15782	(22) Mcf/Day
VGT AF0012	51 Mcf/Day
VGT AF0014	4 Mcf/Day
VGT AF0102	9 Mcf/Day
VGT AF0183	(1,852) Mcf/Day
Wadena Delivered Option	2,175 Mcf/Day
Centra FT	0 Mcf/Day
Total Overall Change	1,252 Mcf/Day

* Numbers are not part of peak day deliverability

2. Other Demand Entitlement Changes

As shown in Attachment 6, MERC-NMU proposes a increase in TFX Apr and TFX Oct and an increase of Firm Deferred Delivery (storage) in other pipeline entitlements that are not included in peak day deliverability. MERC has AECO Storage, to deliver the supply from storage to MERC-NMU's markets, MERC entered in an AECO/Emerson swap. MERC sells gas at the storage point (AECO) to a supplier and buys an equivalent volume at Emerson/Spruce, which MERC then transports to its PNG-GLGT, PNG-VGT and NMU (GLGT, VGT and Centra) customers. The swap alleviated the need to contract for firm transport on TransCanada Pipeline (TCPL) to transport the gas from AECO to Emerson/Spruce.

D. Financial Option Units and Premiums

- i. MERC entered into New York Mercantile Exchange (NYMEX) financial Call Options for the upcoming 2012/2013 winter (November through March). Please see Attachment 5.
- ii. Total premium cost to enter into the financial Call Options on behalf of MERC's firm customers amounted to \$377,940 for the 2012/2013 winter. Please see Attachment 5.
- iii. MERC entered into 163 contracts (10,000/contract) or 1,630,000. Total premium per contract is approximately \$0.2319. Please see Attachment 5.
- iv. Please see Attachment 5 for the various contract dates.
- v. Please see Attachment 5 for the various contract prices.
- vi. MERC entered into 106 futures contracts (10,000/contract) or 1,060,000,

vii. MERC believes a diversified portfolio approach towards hedging is in the best interest of MERC's firm customers. MERC implemented a 40% fixed price (storage and futures contracts), 30% financial call options and 30% market based prices, assuming normal weather. A dollar-cost-averaging approach is utilized in purchasing the hedging portfolio. Although this hedging strategy will most likely not provide the lowest priced supply, it does meet MERC's stated objectives of providing reliable and reasonably priced natural gas and mitigates natural gas price volatility. Please see Attachment 10, pages 1 through 4.

E. Gas Supply.

The NMU 2012-2013 Winter Portfolio Plans - Minnesota Energy Resources Corporation for NNG, GLGT, VGT and Centra gas supply purchases for the Hedging Plans is in Attachment 10 pages 5 and 6. This Attachment includes the projected sales number by month for the November 2012 through March 2013 period as well as the planned physical fixed price, financial call options and storage and/or exchange volumes by month.

F. Price Volatility

MERC's hedging strategy as described in section 2.(D).(vii.) provides the opportunity to ensure MERC customers are seventy percent (70%) hedged assuming normal winter volumes. The 70% hedged is accomplished by 40% of normal winter volumes hedged by a fixed price, which is comprised of storage and futures contracts. MERC is projecting the weighted average cost of gas (WACOG) for futures contracts of natural gas to be approximately \$3.9463. Please see Attachment 13, page 1 of 3. MERC

is projecting the storage WACOG on NNG Storage and AECO Storage to be approximately \$2.1432. This is an estimate based upon the purchases in October but since this filing is being made before the accounting is closed for October, this estimate may change. Please see Attachment 13, page 2 of 3. The remaining 30% of the 70% is hedged by financial call options. MERC purchased call options at an average strike price of \$3.6315, which means if NYMEX contract(s) settle above that price, the options are exercised and MERC customers' gas cost is capped at the average strike price. Please see Attachment 13, page 3 of 3. Since financial options are paper only MERC purchases physical index supply to back the financial call options. MERC projects the gas costs to be approximately \$3.34 for 70% of normal winter volumes assuming that the NYMEX prices are above the average strike price plus the physical index basis spread. If the NYMEX prices are below the average strike price, the average natural gas cost for 70% of the normal winter volumes will be lower. The remaining 30% of normal winter volumes are purchased at index or market prices. All numbers reflected are natural gas costs only and do not include any transportation, storage, hedge premium or margin costs.

G. PGA Cost Recovery

MERC proposes to begin recovering the costs associated with the change in demand-related costs in its monthly PGA effective November 1, 2012. Rate impacts associated with this change can be found on Attachment 4, pages 1 through 3, and on page 1 of Attachment 7. MERC has also calculated the rate impact of moving the cost recovery of FDD Storage contracts from the demand cost recovery portion of the monthly PGA to the commodity cost recovery portion of the monthly PGA. Attachment 4, pages

4 through 6, and Attachment 7, page 2, illustrate the rate impact created by this shift in cost recovery.

H. Impacts of Telemetry

Based on the requirement that all interruptible and transportation customers on MERC's system must have telemetry, this has led to some customers switching from interruptible to firm. On the MERC-NMU, there have been two (2) customers that switched from interruptible to firm service. The switching occurred between December 21, 2011 through August 23, 2012. Since MERC's peak day analysis is based on December through February volumes for the three previous winters, for the most part, these volumes aren't represented in MERC's design day analysis. MERC projected the impact on firm requirements by projecting peak day volumes for the customers that switched. The projected peak day was calculated by taking actual peak day and dividing the volume by twenty (20). MERC is projecting an increase in design day of 224 Mcf. Assuming the projected peak day is accurate, MERC would still have adequate firm entitlement to meet a peak day.

II. CONCLUSION

Based upon the foregoing, MERC respectfully requests the Minnesota Public Utilities Commission grant the demand changes requested herein effective November 1, 2012. If any further information, clarification, or substantiation is required to support this filing please advise.

DATED: November 1, 2012

Respectfully Submitted,

DORSEY & WHITNEY LLP

By s/
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Minneapolis, MN 55402-1498
Telephone: (612) 340-2600

Attorney for Minnesota Energy
Resources Corporation

AFFIDAVIT OF SERVICE

STATE OF MINNESOTA)
) ss
COUNTY OF HENNEPIN)

Amber S. Lee hereby certifies that on the 1st day of October, 2012, on behalf of Minnesota Energy Resources Corporation (MERC) she electronically filed a true and correct copy of the Petition on www.edockets.state.mn.us. Said documents were also served via U.S. mail and electronic service as designated on the attached service list.

/s/ Amber S. Lee
Amber S. Lee

Subscribed and sworn to before me
this 1st day of October, 2012.

/s/ Paula Bjorkman
Notary Public, State of Minnesota

[illegible]

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Andrew	Moratzka	apm@mcmlaw.com	Mackall, Crounse and Moore	1400 AT&T Tower 901 Marquette Ave Minneapolis, MN 55402	Paper Service	No	GEN_SL_Minnesota Energy Resources Corporation_General Service List
Eric	Swanson	eswanson@winthrop.com	Winthrop Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	GEN_SL_Minnesota Energy Resources Corporation_General Service List
Gregory	Walters	gjwalters@minnesotaenergyresources.com	Minnesota Energy Resources Corporation	3460 Technology Dr. NW Rochester, MN 55901	Paper Service	No	GEN_SL_Minnesota Energy Resources Corporation_General Service List

PUBLIC DOCUMENT - TRADE SECRET DATA HAS BEEN EXCISED

Attachment 1
Page 1 of 3

MINNESOTA ENERGY RESOURCES - NMU
DESIGN-DAY DEMAND SUMMARY
NOVEMBER 1, 2012

Design Day Requirement		60264.8
Total Peak Day Entitlement		63352
Firm Peak Day Actual Sendout -Non Coincidental	(Jan. 19)	46380
Firm Annual Throughput - Minnesota		6623739
No. of Firm Customers		40900
Department Load Factor Calculation		0.391273

MINNESOTA ENERGY RESOURCES - NMU
MINNESOTA DESIGN DAY REQUIREMENTS
NOVEMBER 1, 2012

HDD

Pipeline Group	2011/12 Customer Count	1/20 Design DDD	Regression Factors				Regressior Total	Regressior Adjustmen	1/20 Requi	2008/09 Customer Growth	Total
			Intercept	Slope	% of total load		Footnote 1	Footnote 2	Footnote 3		
NNG											
Peak	17998	103	2082	244			27258	2255	25003	0	25003
Off Peak	17998	55	2082	244			15525	860	14665	0	14665
VGT											
VGT	5754	109	1546	67			8772	680	8092	0	8092
**VGT/GLC	3202	107	347	49	0.68	3824.32	393.72	3430.6		0	3430.6
Peak	8956		1893	116					11522.6		11522.6
VGT	5754	57	1546	67			5342	89	5253	0	5253
VGT/GLGT	3202	57	347	49	0.68	2156.28	156.4	1999.88		0	1999.88
Off Peak	8956		1893	116					7252.88		7252.88
GLGT											
**VGT/GLC	3202	107	347	49	0.32	1799.68	185.28	1614.4		0	1614.4
GLGT	8288	105.32	1512	129		15041	830	14210.8		0	14210.8
Peak	11490		1859	178					15825.2		15825.2
VGT/GLGT	3202	57	347	49	0.32	1014.72	73.6	941.12		0	941.12
GLGT	8288	57	1512	129		8845	-287	9132		0	9132
Off Peak	11490		1859	178					10073.12		10073.12
Centra											
Peak	5658	107	1498	85		10574	2660	7914		0	7914
Off Peak	5658	57	1498	85		6333	1343	4990		0	4990
Total NMU											
Peak	40900		6985	574		67269	7004	60264.8		0	60264.8
Off Peak	40900		6985	574		39216	2235	36981		0	36981

Footnote 1 Regression Total is based on total through-put data.

Footnote 2 Regression Adjustment subtracts out Interruptible, Transportation and Joint Interruptible volumes and adds Firm Joint volumes.

Footnote 3 Total equals Regression Total minus Regression Adjustment.

**Dual Supplied

MINNESOTA ENERGY RESOURCES - NMU
DESIGN-DAY DEMAND PER CUSTOMER
NOVEMBER 1, 2012

Heating Season	No. of Firm Customers	Design Day Requirements	MMBtus /Customer /Day
12/13	40900	60264.8	1.473467
11/12	40900	57989	1.417824
10/11	40400	57662	1.427277
09/10	41135	60918	1.480929
08/09	39112	63726	1.629321
07/08	38258	61008	1.594647
06/07	38483	61060	1.586675
05/06	38208	62107	1.625497

MINNESOTA ENERGY RESOURCES - NMU
SUMMER/WINTER USAGE - Mcf
PROJECTED 12 MONTHS ENDING JUNE 2013

Class	Summer Apr-Oct	Winter Nov-Mar	Total
GS	1056500	4415943	5472444
IS	222113.4	929182.5	1151296
Total	1278614	5345126	6623739

Source: Calendar data from SUMG MERCFcst201204 (4-26-12).xlsx

MINNESOTA ENERGY RESOURCES - NMU
ENTITLEMENT LEVELS
PROPOSED TO BE EFFECTIVE NOVEMBER 1, 2012

Type of Capacity or Entitlement	Current Amount Mcf or MMBtu	Proposed Change Mcf or MMBtu	Proposed Amount Mcf or MMBtu
NNG TF 12 Base & Variable	7622	718	8340
NNG TF 5	3267	307	3574
NNG TFX 12	3268	308	3576
NNG TFX 5	9126	860	9986
Bison *	5060	477	5537
NBPL *	5060	477	5537
NNG Zone GDD Call Option	1265	-1265	0
NNG Offpeak TFX*	0	0	0
NNG Subtotal	24548	928	25476
FT Western Zone FT0016	6231	-24	6207
FT Western Zone (12) FT0155	2214	-8	2206
FT Western Zone (5) FT0155	2238	-9	2229
FT Western Zone FT15782	5536	-22	5514
FT-A ZONE 1 - 1 AF0012	7711	51	7762
FT-A ZONE 1 - 1 AF0014	678	4	682
FT-A ZONE 1 - 1 AF0102	1234	9	1243
FT-A ZONE 1 - 1 AF0183	1852	-1852	0
Wadena Call Option	0	2175	2175
CENTRA FT-1	9858	0	9858
Total Entitlement	62100	1252	63352
Forecasted Design Day-Adjusted	57989	2275.8	60264.8
Capacity Surplus/Shortage	4111	-1023.8	3087.2
Reserve Margin	0.070893		0.051227

* Bison/NBPL does not add incremental capacity but is utilized to deliver Rockies supply to NNG. Volume is not included in Total Design Day capacity.

MINNESOTA ENERGY RESOURCES - NMU
RATE IMPACT OF THE PROPOSED DEMAND CHANGE
NOVEMBER 1, 2012

All costs in \$/MMBtu	Last Base Cost of Gas	Demand Change G007,G01: MR10-978 M-11-XXX; Feb. 11	Last Demand Change G011- M-12-XXX; May 12^	Most Recent PGA** Oct. 2012	Current Proposal Effective Nov.1,2011	Result of Change from Last Case	Proposed Change from Last Demand Change	Change from Last PGA %	Change from Last PGA \$
1) General Service-Residential Avg. Annual Use: 90 Mcf									
Commodity Cost	5.6422	4.1061	2.399	3.1724	3.3688	-0.40293	-0.55366	0.061909	0.1964
Demand Cost	1.3841	1.2268	1.2787	1.2862	1.343142	-0.02959	-0.03339	0.044271	0.056942
Commodity Margin	2.1759	2.1759	2.1759	2.1759	2.1759	0	0	0	0
Total Cost of Gas	9.2022	7.5088	5.8536	6.6345	6.887842	-0.2515	-0.30822	0.038186	0.253342
Avg Annual Cost	828.198	675.792	526.824	597.105	619.9058	-0.2515	-0.30822	0.038186	22.80076
Effect of proposed commodity change on average annual bills:									17.676
Effect of proposed demand change on average annual bills:									5.12476
2) Large General Service: Avg. Annual Use: 4932 Mcf									
Commodity Cost	5.6422	4.1061	2.399	3.1724	3.3688	-0.40293	-0.17956	0.061909	0.1964
Demand Cost	1.3841	1.2268	1.2787	1.2862	1.343142	-0.02959	0.094834	0.044271	0.056942
Commodity Margin	1.966	1.966	1.966	1.966	1.966	0	0	0	0
Total Cost of Gas	8.9923	7.2989	5.6437	6.4246	6.677942	-0.25737	-0.08508	0.039433	0.253342
Avg Annual Cost	44350.02	35998.17	27834.73	31686.13	32935.61	-0.25737	-0.08508	0.039433	1249.482
Effect of proposed commodity change on average annual bills:									968.6448
Effect of proposed demand change on average annual bills:									280.8368
3) SV Interruptible Service: Avg. Annual Use: 6068 Mcf									
Commodity Cost	5.6422	4.1061	2.399	3.1724	3.3688	-0.40293	-0.17956	0.061909	0.1964
Commodity Margin	0.956	0.956	0.956	0.956	0.956	0	0	0	0
Total Cost of Gas	6.5982	5.0621	3.355	4.1284	4.3248	-0.34455	-0.14565	0.047573	0.1964
Avg Annual Cost	40037.88	30716.82	20358.14	25051.13	26242.89	-0.34455	-0.14565	0.047573	1191.755
Effect of proposed commodity change on average annual bills:									1191.755
4) LV Interruptible Service: Avg. Annual Use: 40821 Mcf									
Commodity Cost	5.6422	4.1061	2.399	3.1724	3.3688	-0.40293	-0.17956	0.061909	0.1964
Commodity Margin	0.2846	0.2846	0.2846	0.2846	0.2846	0	0	0	0
Total Cost of Gas	5.9268	4.3907	2.6836	3.457	3.6534	-0.38358	-0.16792	0.056812	0.1964
Avg Annual Cost	241937.9	179232.8	109547.2	141118.2	149135.4	-0.38358	-0.16792	0.056812	8017.244
Effect of proposed commodity change on average annual bills:									8017.244

Note: Average Annual Average based on PNG Annual Automatic Adjustment Report in Docket No. E,G999/AA-11-793

*As submitted in Docket No. G007,011/MR-10-978; to coincide with implementation of interim rates in Docket No. G007,011/MR-10-977

^\$/Mcf Demand Cost rate reflects adjustment to Annual Demand Volumes made on March 1, 2012 & revised demand costs per Dockets G011/M-12-558 and G011/M-12-559

MINNESOTA ENERGY RESOURCES - NMU

DEMAND

Cost/Ccf

Contract Type			Monthly Entitlement		Rate	Contract	Rate Case	
			(Dth)	Months	(\$/Dth)	Costs	Sales (therms)	
Northern Natural Gas (NNG)	Season							
TF12B (Max Rate)	112495	Annual	5125	12	7.5776	466022	52675364	0.008847
TF12V (Max Rate)	112495	Annual	3215	12	9.0926	350793	52675364	0.00666
TF5 (Max Rate)	112495	Winter	3574	5	15.153	270784	52675364	0.005141
TF12B (Discount-Wint	112495	Annual	0	12	6.4818	0	52675364	0
TFX5 (Discount)	112561	Winter	664	5	4.56	15139	52675364	0.000287
TFX12 (Max Rate)	112486	Annual	1198	12	9.6288	138424	52675364	0.002628
TFX Apr (Max Rate)	112486	Summer	221	1	5.683	1256	52675364	2.38E-05
TFX Oct (Max Rate)	112486	Summer	221	1	5.683	1256	52675364	2.38E-05
TFX5 (Max Rate)	112486	Winter	6353	5	15.153	481335	52675364	0.009138
TFX5 (Discount)	112486	Winter	199	5	7.6	7562	52675364	0.000144
TFX12 (Discount)	111866	Annual	142	12	4.864	8288	52675364	0.000157
TFX12 (Discount)	111866	Annual	916	12	5.472	60148	52675364	0.001142
TFX12 (Discount)	111866	Annual	1320	12	2.2192	35152	52675364	0.000667
TFX5 (Discount)	111866	Winter	42	5	4.864	1021	52675364	1.94E-05
TFX5 (Discount)	111866	Winter	271	5	5.472	7415	52675364	0.000141
TFX5 (Discount)	111866	Winter	2457	5	15.1392	185985	52675364	0.003531
Bison	FT0003	Annual	5537	12	17.48	1161441	52675364	0.022049
NBPL	T8673F	Annual	5537	12	6.992	464576	52675364	0.00882
Windom		Annual	0	12	0	0	52675364	0
Northwestern Energy		Annual	0	12	8	0	52675364	0
NNG Zone GDD Call Option		Winter	0	3	0	0	52675364	0
SMS	112521	Annual	2512	12	2.18	65714	52675364	0.001248
FDD - Reservation	118657	Annual	8354	12	1.714	171825	52675364	0.003262
FDD - Storage Cycle	118657	Annual	96326	5	0.3567	171797	52675364	0.003261
FDD - Reservation	118657	Annual	615	12	3.3157	24470	52675364	0.000465
FDD - Storage Cycle	118657	Annual	7087	5	0.6901	24454	52675364	0.000464
FDD - Reservation	123780	Annual	1441	12	1.714	29638	52675364	0.000563
FDD - Storage Cycle	123780	Annual	16610	5	0.3567	29624	52675364	0.000562
FDD - Reservation	123781	Annual	384	12	1.714	7898	52675364	0.00015
FDD - Storage Cycle	123781	Annual	4429	5	0.3567	7899	52675364	0.00015
NNG Demand						4189916	52675364	0.079542
Viking (VGT)								
FT-A ZONE 1 - 1	AF0012	Annual	7762	12	3.4671	322940	52675364	0.006131
FT-A ZONE 1 - 1	AF0014	Winter	682	3	3.4671	7094	52675364	0.000135
FT-A ZONE 1 - 1	AF0102	Annual	1243	12	3.4671	51715	52675364	0.000982
FT-A ZONE 1 - 1	AF0183	Winter	0	5	3.7671	0	52675364	0
Wadena Delivered GDD Call Opti		Winter	2175	3	1.199752	7828.38	52675364	0.000149
Balancing Agreement	ML0021	Annual	4638	12	1	55656	52675364	0.001057
VGT Demand						445233.4	52675364	0.008452
Great Lakes (GLGT)								
FT Western Zone	FT0016	Annual	6207	12	3.458	257566	52675364	0.00489
FT Western Zone (12)	FT0155	Annual	2206	12	3.458	91540	52675364	0.001738
FT Western Zone (5)	FT0155	Winter	2229	5	3.458	38539	52675364	0.000732
FT Western Zone	FT15782	Annual	5514	12	3.458	228809	52675364	0.004344

GLGT Demand					616454	52675364	0.011703
Centra							
CENTRA TRANSMIS\$ (\$Cdn/103M3)				197.709			
Conversion ((((\$Cdm103M3)*279.: Annual	9500	12	5.811726	662536.8	52675364	0.012578	
Union Balancing Annual	4500	12	1	54000	52675364	0.001025	
CENTRA MINNESOTA PIPELINE Annual	9500	12	1.778	202692	52675364	0.003848	
Centra Demand					919228.8	52675364	0.017451
AECO							
Niska Storage (AECO) Annual	648265	1	0.954822	618978	52675364	0.011751	
AECO/Emerson Swap Annual	648267	1	0.440001	285238	52675364	0.005415	
AECO Demand					904216	52675364	0.017166
NMU DEMAND - \$/Ccf					7075048		0.134314

For Joint Rate Demand 52675364 Annual Firm Sales in therms

	Units Dth's	Months	Annual Dth's
Northern Natural Gas (NNG)			
TF12B (Max Rate)	5125	12	61500
TF12V (Max Rate)	3215	12	38580
TF5 (Max Rate)	3574	5	17870
TF12B (Discount-Winter)	0	12	0
TFX5 (Discount)	664	5	3320
TFX12 (Max Rate)	1198	12	14376
TFX Apr (Max Rate)	221	1	221
TFX Oct (Max Rate)	221	1	221
TFX5 (Max Rate)	6353	5	31765
TFX5 (Discount)	199	5	995
TFX12 (Discount)	142	12	1704
TFX12 (Discount)	916	12	10992
TFX12 (Discount)	1320	12	15840
TFX5 (Discount)	42	5	210
TFX5 (Discount)	271	5	1355
TFX5 (Discount)	2457	5	12285
Bison	5537	12	66444
NBPL	5537	12	66444
Windom	0	12	0
Northwestern Energy	0	12	0
NNG Zone GDD Call Option	0	3	0
SMS	2512	12	30144
Viking (VGT)			
FT-A ZONE 1 - 1	7762	12	93144
FT-A ZONE 1 - 1	682	3	2046
FT-A ZONE 1 - 1	1243	12	14916
FT-A ZONE 1 - 1	0	5	0
Wadena Delivered GDD Call Option	2175	3	6525
Balancing Agreement	4638	12	55656
Great Lakes (GLGT)			
FT Western Zone	6207	12	74484
FT Western Zone (12)	2206	12	26472

FT Western Zone (5)	2229	5	11145
FT Western Zone	5514	12	66168

Centra			
CENTRA TRANSMISSION			
Conversion (((Cdm103M3)*279.256)/9858)	9500	12	114000
Union Balancing	4500	12	54000
CENTRA MINNESOTA PIPELINES	9500	12	114000

Total Demand Cost			7075048	
Total Demand Weighted Vol in Mcf			6201340	
Total Joint Demand Rate \$/Mcf				1.14089

MINNESOTA ENERGY RESOURCES - NMU

41214

PRESENT AVERAGE COST OF GAS		EFFECTIV		41214	
COMMODITY					
	Rate	Annual Dth	Call Option Premium	Total Annu Cost	Cost/therm
WACOG					
NNG					
GAS COST	3.3203				
FUEL 0.014	0.04714				
COMMODITY TRANSPORTATION	0.036				
ACA	0.0018				
GRI FEE	0				
NNG Commodity	3.40524	2512662	150452.2	8706671	0.12989
VGT					
GAS COST	3.2247				
FUEL 0.0076	0.0247				
COMMODITY TRANSPORTATION	0.013				
GRI	0				
ACA	0.0018				
VGT Commodity	3.2642	1827195	74068.77	6038399	0.09009
GLGT					
GAS COST	3.2247				
FUEL 0.004914	0.01592				
COMMODITY TRANSPORTATION	0.00326				
GRI	0				
ACA	0.0018				
GLGT Commodity	3.24568	966199.7	90271.31	3226246	0.04813
CENTRA					
CENTRA TRANSMIS (\$Cdn/103M3)	1.062				
Conversion x0.9306	0.030088				
GAS COST	3.2247				
CUSTOMS FEE	0.000286				
CENTRA Commodity	3.255074	1396834	62495.52	4609293	0.06877
NMU Weighted Average gas cost - \$/Dth		6702891	377287.8	22580609	0.33688
Total Annu		67028910			

MINNESOTA ENERGY RESOURCES - NMU
RATE IMPACT OF THE PROPOSED DEMAND CHANGE (Illustrates FDD storage contract costs shifted from Demand costs to Commodity costs)
NOVEMBER 1, 2012

All costs in \$/MMBtu	Last Base Cost of Gas	Demand Change	Last Demand Change	Most Recent Demand Change	Current Proposal	Result of Change from Last Case	Proposed Change from Last Demand Change	Change from Last PGA %	Change from Last PGA \$
	G007,G011-MR10-978 Feb. 11	G011-M-11-XXX Nov. 11	G011-M-12-XXX May 12^	Oct. 2012	Effective Nov.1,2011	Rate			
1) General Service Residential Avg. Annual Use:	90 Mcf								
Commodity Cost	5.6422	4.1061	2.399	3.1724	3.530893	-0.3742	-0.51419	0.113004	0.358493
Demand Cost	1.3841	1.2268	1.2787	1.2862	1.084212	-0.21667	-0.24445	-0.15704	-0.20199
Commodity Margin	2.1759	2.1759	2.1759	2.1759	2.1759	0	0	0	0
Total Cost of Gas	9.2022	7.5088	5.8536	6.6345	6.791005	-0.26202	-0.32112	0.02359	0.156505
Avg Annual Cost	828.198	675.792	526.824	597.105	611.1905	-0.26202	-0.32112	0.02359	14.08545
Effect of proposed commodity change on average annual bills:									32.26439
Effect of proposed demand change on average annual bills:									-18.1789
2) Large General Service: Avg. Annual Use:	4932 Mcf								
Commodity Cost	5.6422	4.1061	2.399	3.1724	3.530893	-0.3742	-0.14009	0.113004	0.358493
Demand Cost	1.3841	1.2268	1.2787	1.2862	1.084212	-0.21667	-0.11623	-0.15704	-0.20199
Commodity Margin	1.966	1.966	1.966	1.966	1.966	0	0	0	0
Total Cost of Gas	8.9923	7.2989	5.6437	6.4246	6.581105	-0.26814	-0.09834	0.02436	0.156505
Avg Annual Cost	44350.02	35998.17	27834.73	31686.13	32458.01	-0.26814	-0.09834	0.02436	771.8827
Effect of proposed commodity change on average annual bills:									1768.089
Effect of proposed demand change on average annual bills:									-996.206
3) SV Interruptible Service: Avg. Annual Use:	6068 Mcf								
Commodity Cost	5.6422	4.1061	2.399	3.1724	3.530893	-0.3742	-0.14009	0.113004	0.358493
Commodity Margin	0.956	0.956	0.956	0.956	0.956	0	0	0	0
Total Cost of Gas	6.5982	5.0621	3.355	4.1284	4.486893	-0.31998	-0.11363	0.086836	0.358493
Avg Annual Cost	40037.88	30716.82	20358.14	25051.13	27226.47	-0.31998	-0.11363	0.086836	2175.337
Effect of proposed commodity change on average annual bills:									2175.337
4) LV Interruptible Service: Avg. Annual Use:	40821 Mcf								
Commodity Cost	5.6422	4.1061	2.399	3.1724	3.530893	-0.3742	-0.14009	0.113004	0.358493
Commodity Margin	0.2846	0.2846	0.2846	0.2846	0.2846	0	0	0	0
Total Cost of Gas	5.9268	4.3907	2.6836	3.457	3.815493	-0.35623	-0.13101	0.103701	0.358493
Avg Annual Cost	241937.9	179232.8	109547.2	141118.2	155752.2	-0.35623	-0.13101	0.103701	14634.05
Effect of proposed commodity change on average annual bills:									14634.05

Note: Average Annual Average based on PNG Annual Automatic Adjustment Report in Docket No. E,G999/AA-11-793

*As submitted in Docket No. G007,011/MR-10-978; to coincide with implementation of interim rates in Docket No. G007,011/MR-10-977

^\$/Mcf Demand Cost rate reflects adjustment to Annual Demand Volumes made on March 1, 2012 & revised demand costs per Dockets G011/M-12-558 and G011/M-12-559

MINNESOTA ENERGY RESOURCES - NMU

(Illustrates FDD storage contract costs shifted from Demand costs to Commodity costs)

DEMAND

Cost/Ccf

Contract Type			Monthly Entitlement		Rate	Contract	Rate Case	
			(Dth)	Months	(\$/Dth)	Costs	Sales (therms)	
Northern Natural Gas (NNG)	Season							
TF12B (Max Rate)	112495 Annual		5125	12	7.5776	466022	52675364	0.008847
TF12V (Max Rate)	112495 Annual		3215	12	9.0926	350793	52675364	0.00666
TF5 (Max Rate)	112495 Winter		3574	5	15.153	270784	52675364	0.005141
TF12B (Discount-Wint	112495 Annual		0	12	6.4818	0	52675364	0
TFX5 (Discount)	112561 Winter		664	5	4.56	15139	52675364	0.000287
TFX12 (Max Rate)	112486 Annual		1198	12	9.6288	138424	52675364	0.002628
TFX Apr (Max Rate)	112486 Summer		221	1	5.683	1256	52675364	2.38E-05
TFX Oct (Max Rate)	112486 Summer		221	1	5.683	1256	52675364	2.38E-05
TFX5 (Max Rate)	112486 Winter		6353	5	15.153	481335	52675364	0.009138
TFX5 (Discount)	112486 Winter		199	5	7.6	7562	52675364	0.000144
TFX12 (Discount)	111866 Annual		142	12	4.864	8288	52675364	0.000157
TFX12 (Discount)	111866 Annual		916	12	5.472	60148	52675364	0.001142
TFX12 (Discount)	111866 Annual		1320	12	2.2192	35152	52675364	0.000667
TFX5 (Discount)	111866 Winter		42	5	4.864	1021	52675364	1.94E-05
TFX5 (Discount)	111866 Winter		271	5	5.472	7415	52675364	0.000141
TFX5 (Discount)	111866 Winter		2457	5	15.1392	185985	52675364	0.003531
Bison	FT0003 Annual		5537	12	17.48	1161441	52675364	0.022049
NBPL	T8673F Annual		5537	12	6.992	464576	52675364	0.00882
Windom	0 Annual		0	12	0	0	52675364	0
Northwestern Energy	0 Annual		0	12	8	0	52675364	0
NNG Zone GDD Call C	0 Winter		0	3	0	0	52675364	0
SMS	112521 Annual		2512	12	2.18	65714	52675364	0.001248
FDD - Reservation	118657 Annual		8354	12	0	0	52675364	0
FDD - Storage Cycle	118657 Annual		96326	5	0	0	52675364	0
FDD - Reservation	118657 Annual		615	12	0	0	52675364	0
FDD - Storage Cycle	118657 Annual		7087	5	0	0	52675364	0
FDD - Reservation	123780 Annual		1441	12	0	0	52675364	0
FDD - Storage Cycle	123780 Annual		16610	5	0	0	52675364	0
FDD - Reservation	123781 Annual		384	12	1.714	7898	52675364	0.00015
FDD - Storage Cycle	123781 Annual		4429	5	0.3567	7899	52675364	0.00015
NNG Demand						3730209	52675364	0.070815
Viking (VGT)								
FT-A ZONE 1 - 1	AF0012 Annual		7762	12	3.4671	322940	52675364	0.006131
FT-A ZONE 1 - 1	AF0014 Winter		682	3	3.4671	7094	52675364	0.000135
FT-A ZONE 1 - 1	AF0102 Annual		1243	12	3.4671	51715	52675364	0.000982
FT-A ZONE 1 - 1	AF0183 Annual		0	5	3.7671	0	52675364	0
Wadena Delivered GC	0 Annual		2175	3	1.199752	7828	52675364	0.000149
Balancing Agreement	ML0021 Winter		4638	12	1	55656	52675364	0.001057
VGT Demand						445233	52675364	0.008452
Great Lakes (GLGT)								
FT Western Zone	FT0016 Annual		6207	12	3.458	257566	52675364	0.00489
FT Western Zone (12)	FT0155 Annual		2206	12	3.458	91540	52675364	0.001738
FT Western Zone (5)	FT0155 Winter		2229	5	3.458	38539	52675364	0.000732
FT Western Zone	FT15782 Annual		5514	12	3.458	228809	52675364	0.004344

GLGT Demand					616454	52675364	0.011703
Centra							
CENTRA TRANSMIS\$ (\$Cdn/103M3)				197.709			
Conversion ((((\$Cdm103M3)*279.: Annual	9500	12	5.811726		662537	52675364	0.012578
Union Balancing Annual	4500	12	1		54000	52675364	0.001025
CENTRA MINNESOTA PIPELINE Annual	9500	12	1.778		202692	52675364	0.003848
Centra Demand					919229	52675364	0.017451
AECO							
Niska Storage (AECO) Annual	648265	1	0		0	52675364	0
AECO/Emerson Swap Annual	648267	1	0		0	52675364	0
AECO Demand					0	52675364	0
NMU DEMAND - \$/Ccf					5711125		0.108421

For Joint Rate Demand 52675364 Annual Firm Sales in therms

	Units Dth's	Months	Annual Dth's
Northern Natural Gas (NNG)			
TF12B (Max Rate)	5125	12	61500
TF12V (Max Rate)	3215	12	38580
TF5 (Max Rate)	3574	5	17870
TF12B (Discount-Winter)	0	12	0
TFX5 (Discount)	664	5	3320
TFX12 (Max Rate)	1198	12	14376
TFX Apr (Max Rate)	221	1	221
TFX Oct (Max Rate)	221	1	221
TFX5 (Max Rate)	6353	5	31765
TFX5 (Discount)	199	5	995
TFX12 (Discount)	142	12	1704
TFX12 (Discount)	916	12	10992
TFX12 (Discount)	1320	12	15840
TFX5 (Discount)	42	5	210
TFX5 (Discount)	271	5	1355
TFX5 (Discount)	2457	5	12285
Bison	5537	12	66444
NBPL	5537	12	66444
Windom	0	12	0
Northwestern Energy	0	12	0
NNG Zone GDD Call Option	0	3	0
SMS	2512	12	30144
Viking (VGT)			
FT-A ZONE 1 - 1	7762	12	93144
FT-A ZONE 1 - 1	682	3	2046
FT-A ZONE 1 - 1	1243	12	14916
FT-A ZONE 1 - 1	0	5	0
Wadena Delivered GDD Call Option	2175	3	6525
Balancing Agreement	4638	12	55656
Great Lakes (GLGT)			
FT Western Zone	6207	12	74484
FT Western Zone (12)	2206	12	26472

FT Western Zone (5)	2229	5	11145
FT Western Zone	5514	12	66168

Centra			
CENTRA TRANSMISSION			
Conversion (((Cdm103M3)*279.256)/9858)	9500	12	114000
Union Balancing	4500	12	54000
CENTRA MINNESOTA PIPELINES	9500	12	114000

Total Demand Cost			5711125	
Total Demand Weighted Vol in Mcf			6201340	
Total Joint Demand Rate \$/Mcf				0.92095

MINNESOTA ENERGY RESOURCES - NMU
November 1, 2012

(Illustrates FDD storage contract costs shifted from Demand costs to Commodity costs)
PRESENT AVERAGE COST OF GAS EFFECTIV 41214

COMMODITY

NNG

	Season	Monthly Entitlement (Dth)	Months	Rate (\$/Dth)	Contract Costs	NNG Annual Sales (therms)	Rate (\$/therm)
FDD - Reservation	Annual	8354	12	1.714	171825.1	67028910	0.002563
FDD - Storage Cycle	Annual	96326	5	0.3567	171797.4	67028910	0.002563
FDD - Reservation	Annual	615	12	3.3157	24469.87	67028910	0.000365
FDD - Storage Cycle	Annual	7087	5	0.6901	24453.69	67028910	0.000365
FDD - Reservation	Annual	1441	12	1.714	29638.49	67028911	0.000442
FDD - Storage Cycle	Annual	16610	5	0.3567	29623.94	67028912	0.000442
FDD - Reservation	Annual	384	12	1.714	7898.112	67028910	0.000118
FDD - Storage Cycle	Annual	4429	5	0.3567	7899.122	67028910	0.000118
					467605.7	67028910	0.006976

AECO

	Season	Monthly Entitlement (Dth)	Months	Rate (\$/Dth)	Contract Costs	NNG Annual Sales (therms)	Rate (\$/therm)
Niska Storage (AECO)	Annual	648265	1	0.954822	618978	67028910	0.009234
					1086584	67028910	0.016211

WACOG

	Rate	Annual Dth	Call Option Premium	Total Annu Cost	Cost/therm
NNG					
GAS COST	3.3203				
FUEL 0.014	0.04714				
COMMODITY TRANSPORTATION	0.036				
ACA	0.0018				
GRI FEE	0				
NNG Commodity	3.40524	2512662	150452.2	8706671	0.129894
VGT					
GAS COST	3.2247				
FUEL 0.0076	0.0247				
COMMODITY TRANSPORTATION	0.013				
GRI	0				
ACA	0.0018				
VGT Commodity	3.2642	1827195	74068.77	6038399	0.090086
GLGT					
GAS COST	3.2247				
FUEL 0.004914	0.01592				
COMMODITY TRANSPORTATION	0.00326				
GRI	0				
ACA	0.0018				
GLGT Commodity	3.24568	966199.7	90271.31	3226246	0.048132
CENTRA					
CENTRA TRANSMIS (\$Cdn/103M3)	1.062				
Conversion x0.9306	0.030088				
GAS COSTS	3.2247				
CUSTOMS FEE	0.000286				
CENTRA Commodity	3.255074	1396834	62495.52	4609293	0.068766
NMU Weighted Average gas cost - \$/Dth		6702891	377287.8	22580609	0.336879
		Total Annu 67028910			
				Total Commodity Cost	23667193 67028910 0.353089

Cut and past WACOG "block" from NMU4.3

			6702891	
confirm with shawn		2008 forec allocator	Sales w/o Losses & Unacc	
nng	25985910	0.374862	2512662	
glgt	18896820	0.272598	1827195	
vgt	9992420	0.144147	966199.7	
centra	14446030	0.208393	1396834	
	69321180	1	6702891	

MINNESOTA ENERGY RESOURCES - NMU
Financial Options
Heating Season 2012-2013

[TRADE SECRET DATA BEGINS

Units - Gas Daily Peaker Packages (Physical)

November Contract Date	Daily Volume	December Contract Date	Daily Volume	January Contract Date	Daily Volume	February Contract Date	Daily Volume	March Contract Date	Daily Volume	Daily Total	Term Total
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Premium - Gas Daily Peaker (Monthly Cost)

November Option Premium	Premium Cost	December Option Premium	Premium Cost	January Option Premium	Premium Cost	February Option Premium	Premium Cost	March Option Premium	Premium Cost	Total Option Premium	Premium Cost
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Units - Futures (Daily Volume)

November Contract Date	Daily Volume	December Contract Date	Daily Volume	January Contract Date	Daily Volume	February Contract Date	Daily Volume	March Contract Date	Daily Volume	Daily Total	Term Total
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

Total	7666.667 230000	6451.613 200000	8387.097 260000	5714.286 160000	6774.194 210000	34993.86	1060000 1060000
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Units - Call Options (Daily Volume)

November Contract Date	Daily Volume	December Contract Date	Daily Volume	January Contract Date	Daily Volume	February Contract Date	Daily Volume	March Contract Date	Daily Volume	Daily Total	Term Total
1											
2											
3											
4											
5											
6											
7											

Total	8333.333 250000	11935.48 370000	13548.39 420000	12142.86 340000	8064.516 250000	54024.58	1630000 1630000
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Premium - Call Option (Monthly Cost)

November Option Premium	Premium Cost	December Option Premium	Premium Cost	January Option Premium	Premium Cost	February Option Premium	Premium Cost	March Option Premium	Premium Cost	Total Option Premium	Premium Cost
1											
2											
3											
4											
5											
6											
7											

Total	0.1659	41465.22	0.191	70670	0.2373	99680	0.2807	95447.87	0.2827	70676.72	0.2319	377939.8
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Units - Collar Floor (put)
No Puts were purchased.

TRADE SECRET DATA ENDS]

MINNESOTA ENERGY RESOURCES - NMU

	M-08-1329 NMU GS	M-09- NMU GS	M-10- NMU GS	M-11- NMU GS	M-12- NMU GS	Proposed Change
NNG Design	21791	24680	23615	23778	25003	1225
Customer Requirements moving to Transportation						
Adjusted Design Day						
Adjusted D	1	1	1	1	1	0
Factors for	1	1	1	1	1	0

NNG Allocated Entitlements in PGA

TF12B	2653	7513	4232	4774	5125	351
TF12V	6643	5243	3919	2848	3215	367
TF(5)	5451	1991	3493	3267	3574	307
TFX(12)	0	0	3495	3268	3576	308
TFX(5)	6139	6139	9759	9126	9986	860
LS Power	2777	2725	3149	0	0	0
TFX(5)	0	0	0	0	0	0
Peak Capa	0	0	0	0	0	0
Total NNG	23663	23611	28047	23283	25476	2193

Other Pipelines Entitlements in PGA

Viking FT-/	7966	7966	7966	8945	9005	60
Viking FT-(	0	0	0	2530	682	-1848
Viking FT-/	5902	5902	0	0	0	0
Viking/NNC	926	1368.42	0	0	0	0
Viking/NNC	0	955.28	0	0	0	0
Viking/NNC	2089	563.22	0	0	0	0
Viking/NNC	2324	2089.31	0	0	0	0
Viking/NNC	563	925.77	0	0	0	0
Wadena D	0	0	0	0	2175	
Great Lake	15308	14308	14308	13981	13927	-54
Great Lake	2138	2138	2138	2238	2229	-9
Centra FT-	9858	9858	9858	9858	9500	-358
Total Capa	64835	63783	62317	60835	62994	2159
Total NNG	23663	23611	28047	23283	25476	2193
Total Trans	64835	63783	62317	60835	62994	2159
Total Seas	22282	17658.99	15390	17161	18646	1485
Percent Se	0.941639	0.747914	0.548722	0.737061	0.731905	-0.00516

Other Entitlements not included in Peak Day Deliverability

TFX Offpe	0	0	216	202	221	19
TFX (Apr/C	0	0	216	202	221	19
TFX Apr.-C	0	0	0	0	0	0
TFX May-S	0	0	0	0	0	0
FDD Stora	7980	7830	9516	8898	10794	1896
FDD Stora	460070	451428	548602	513016	600117.3	87101.29
ANR Capa	0	0	0	0	0	0
Nexen PSC	684604	684604	0	0	0	0
Tenaska P	17763	0	0	0	0	0

AECO Stor	0	0	665043	666223	648265	-17958
NGPL per l	0	0	0	0	0	0
SMS per m	2143	2103	2454	2295	2512	217
SBA	0	0	0	0	0	0
Upstream l	0	0	0	0	0	0

MINNESOTA ENERGY RESOURCES - NMU
Rate Impacts
NMU

	Base Cost Change	Demand Change	Last Dema Change	Most Rece PGA	Nov. 12 P w/ Propose	% Change From Last	% Change From Last	% Change From Last	\$ Change From Last
General S	G011/MR1	Nov. 11	May 12^	Oct. 2012	Demand C	Rate Case	Demand F	PGA	PGA
Commodity	5.6422	4.1061	2.399	3.1724	3.3688	-0.40293	0.404252	0.061909	0.1964
Demand C	1.3841	1.2268	1.2787	1.2862	1.343142	-0.02959	0.050396	0.044271	0.056942
Margin	2.1759	2.1759	2.1759	2.1759	2.1759	0	0	0	0
Total Cost	9.2022	7.5088	5.8536	6.6345	6.887842	-0.2515	0.176685	0.038186	0.253342
Average A	90	90	90	90	90				
Average A	828.198	675.792	526.824	597.105	619.9058	-0.2515	0.176685	0.038186	22.80076

	Base Cost Change	Demand Change	Last Dema Change	Most Rece PGA	Nov. 12 P w/ Propose	% Change From Last	% Change From Last	% Change From Last	\$ Change From Last
Large Gen	G011/MR1	Nov. 11	May 12^	Oct. 2012	Demand C	Rate Case	Demand F	PGA	PGA
Commodity	5.6422	4.1061	2.399	3.1724	3.3688	-0.40293	0.404252	0.061909	0.1964
Demand C	1.3841	1.2268	1.2787	1.2862	1.343142	-0.02959	0.050396	0.044271	0.056942
Margin	1.966	1.966	1.966	1.966	1.966	0	0	0	0
Total Cost	8.9923	7.2989	5.6437	6.4246	6.677942	-0.25737	0.183256	0.039433	0.253342
Average A	4932	4932	4932	4932	4932				
Average A	44350.02	35998.17	27834.73	31686.13	32935.61	-0.25737	0.183256	0.039433	1249.482

	Base Cost Change	Demand Change	Last Dema Change	Most Rece PGA	Nov. 12 P w/ Propose	% Change From Last	% Change From Last	% Change From Last	\$ Change From Last
SV Interru	G011/MR1	Nov. 11	May 12^	Oct. 2012	Demand C	Rate Case	Demand F	PGA	PGA
Commodity	5.6422	4.1061	2.399	3.1724	3.3688	-0.40293	0.404252	0.061909	0.1964
Commodity	0.956	0.956	0.956	0.956	0.956	0	0	0	0
Total Cost	6.5982	5.0621	3.355	4.1284	4.3248	-0.34455	0.289061	0.047573	0.1964
Average A	6068	6068	6068	6068	6068				
Average A	40037.88	30716.82	20358.14	25051.13	26242.89	-0.34455	0.289061	0.047573	1191.755

	Base Cost Change	Demand Change	Last Dema Change	Most Rece PGA	Nov. 12 P w/ Propose	% Change From Last	% Change From Last	% Change From Last	\$ Change From Last
LV Interru	G011/MR1	Nov. 11	May 12^	Oct. 2012	Demand C	Rate Case	Demand F	PGA	PGA
Commodity	5.6422	4.1061	2.399	3.1724	3.3688	-0.40293	0.404252	0.061909	0.1964
Commodity	0.2846	0.2846	0.2846	0.2846	0.2846	0	0	0	0
Total Cost	5.9268	4.3907	2.6836	3.457	3.6534	-0.38358	0.36138	0.056812	0.1964
Average A	40821	40821	40821	40821	40821				
Average A	241937.9	179232.8	109547.2	141118.2	149135.4	-0.38358	0.36138	0.056812	8017.244

	Commodity Change	Commodity Change	Demand Change	Demand Change	Demand Change	Total Change	Total Change	Average Annual Change
October Cl	\$/Mcf	%	\$/Mcf	\$/Mcf	%	\$/Mcf	%	
General S	0.1964	0.1964	0.044271	0.056942	0.044271	0.253342	0.038186	22.80076
Large Gen	0.1964	0.1964	0.044271	0.056942	0.044271	0.253342	0.039433	1249.482
SV Interru	0.1964	0.1964	0	0	0	0.1964	0.047573	1191.755
LV Interru	0.1964	0.1964	0	0	0	0.1964	0.056812	8017.244

* Average Annual Bill amount does not include customer charges.

^\$/Mcf Demand Cost rate reflects adjustment to Annual Demand Volumes made on March 1, 2012 & revised demand costs per Dockets G011/M-12-558 and G011/M-12-559

MINNESOTA ENERGY RESOURCES - NMU
Rate Impacts (Illustrates FDD storage contract costs shifted from Demand costs to Commodity costs)
NMU

	Base Cost Change	Demand Change	Last Dema Change	Most Rece PGA	Nov. 12 P w/ Proposed	% Change From Last	% Change From Last	% Change From Last	\$ Change From Last
General S	G011/MR1	Nov. 11	May 12^	Oct. 2012	Demand C	Rate Case	Demand F	PGA	PGA
Commodity	5.6422	4.1061	2.399	3.1724	3.530893	-0.3742	0.471819	0.113004	0.358493
Demand C	1.3841	1.2268	1.2787	1.2862	1.084212	-0.21667	-0.1521	-0.15704	-0.20199
Margin	2.1759	2.1759	2.1759	2.1759	2.1759	0	0	0	0
Total Cost	9.2022	7.5088	5.8536	6.6345	6.791005	-0.26202	0.160142	0.02359	0.156505
Average A	90	90	90	90	90				
Average A	828.198	675.792	526.824	597.105	611.1905	-0.26202	0.160142	0.02359	14.08545

	Base Cost Change	Demand Change	Last Dema Change	Most Rece PGA	Nov. 12 P w/ Proposed	% Change From Last	% Change From Last	% Change From Last	\$ Change From Last
Large Gen	G011/MR1	Nov. 11	May 12^	Oct. 2012	Demand C	Rate Case	Demand F	PGA	PGA
Commodity	5.6422	4.1061	2.399	3.1724	3.530893	-0.3742	0.471819	0.113004	0.358493
Demand C	1.3841	1.2268	1.2787	1.2862	1.084212	-0.21667	-0.1521	-0.15704	-0.20199
Margin	1.966	1.966	1.966	1.966	1.966	0	0	0	0
Total Cost	8.9923	7.2989	5.6437	6.4246	6.581105	-0.26814	0.166098	0.02436	0.156505
Average A	4932	4932	4932	4932	4932				
Average A	44350.02	35998.17	27834.73	31686.13	32458.01	-0.26814	0.166098	0.02436	771.8827

	Base Cost Change	Demand Change	Last Dema Change	Most Rece PGA	Nov. 12 P w/ Proposed	% Change From Last	% Change From Last	% Change From Last	\$ Change From Last
SV Interru	G011/MR1	Nov. 11	May 12^	Oct. 2012	Demand C	Rate Case	Demand F	PGA	PGA
Commodity	5.6422	4.1061	2.399	3.1724	3.530893	-0.3742	0.471819	0.113004	0.358493
Commodity	0.956	0.956	0.956	0.956	0.956	0	0	0	0
Total Cost	6.5982	5.0621	3.355	4.1284	4.486893	-0.31998	0.337375	0.086836	0.358493
Average A	6068	6068	6068	6068	6068				
Average A	40037.88	30716.82	20358.14	25051.13	27226.47	-0.31998	0.337375	0.086836	2175.337

	Base Cost Change	Demand Change	Last Dema Change	Most Rece PGA	Nov. 12 P w/ Proposed	% Change From Last	% Change From Last	% Change From Last	\$ Change From Last
LV Interru	G011/MR1	Nov. 11	May 12^	Oct. 2012	Demand C	Rate Case	Demand F	PGA	PGA
Commodity	5.6422	4.1061	2.399	3.1724	3.530893	-0.3742	0.471819	0.113004	0.358493
Commodity	0.2846	0.2846	0.2846	0.2846	0.2846	0	0	0	0
Total Cost	5.9268	4.3907	2.6836	3.457	3.815493	-0.35623	0.421782	0.103701	0.358493
Average A	40821	40821	40821	40821	40821				
Average A	241937.9	179232.8	109547.2	141118.2	155752.2	-0.35623	0.421782	0.103701	14634.05

	Commodity Change	Commodity Change	Demand Change	Demand Change	Demand Change	Total Change	Total Change	Average Annual Change
October Cl	\$/Mcf	%	\$/Mcf	\$/Mcf	%	\$/Mcf	%	
General S	0.358493	0.358493	-0.15704	-0.20199	-0.15704	0.156505	0.02359	14.08545
Large Gen	0.358493	0.358493	-0.15704	-0.20199	-0.15704	0.156505	0.02436	771.8827
SV Interru	0.358493	0.358493	0	0	0	0.358493	0.086836	2175.337
LV Interru	0.358493	0.358493	0	0	0	0.358493	0.103701	14634.05

* Average Annual Bill amount does not include customer charges.

^\$/Mcf Demand Cost rate reflects adjustment to Annual Demand Volumes made on March 1, 2012 & revised demand costs per Dockets G011/M-12-558 and G011/M-12-559

MINNESOTA ENERGY RESOURCES - NMU

Change in Costs due to November 1, 2012 Change in Entitlement Levels and Related Demand Costs
NMU

	Oct. 2012	Nov. 2012	Entitlement Change	Oct. 2012		Oct. 2012	Nov. 2012	Total Annual Cost
	Entitlement	Entitlement		Rate	Months	Total Annual	Total Annual	Change
NNG Pipeline								
TF12B (Max)	4774	5125	351	7.5776	12	434105.5	466022	31916.45
TF12V (Max)	2848	3215	367	9.0926	12	310748.7	350793	40044.3
TF5 (Max)	3267	3574	307	15.153	5	247524.3	270784	23259.75
TF12B (Disc)	0	0	0	6.4818	12	0	0	0
TFX5 (Disc)	607	664	57	4.56	5	13839.6	15139	1299.4
TFX12 (Max)	1095	1198	103	9.6288	12	126522.4	138424	11901.57
TFX Apr (Max)	202	221	19	5.683	1	1147.966	1256	108.034
TFX Oct (Max)	202	221	19	5.683	1	1147.966	1256	108.034
TFX5 (Max)	5806	6353	547	15.153	5	439891.6	481335	41443.41
TFX5 (Disc)	182	199	17	7.6	5	6916	7562	646
TFX12 (Disc)	130	142	12	4.864	12	7587.84	8288	700.16
TFX12 (Disc)	837	916	79	5.472	12	54960.77	60148	5187.232
TFX12 (Disc)	1206	1320	114	2.2192	12	32116.26	35152	3035.738
TFX5 (Disc)	38	42	4	4.864	5	924.16	1021	96.84
TFX5 (Disc)	247	271	24	5.472	5	6757.92	7415	657.08
TFX5 (Disc)	2246	2457	211	15.1392	5	170013.2	185985	15971.78
Bison	5060	5537	477	17.48	12	1061386	1161441	100055.4
NBPL	5060	5537	477	6.992	12	424554.2	464576	40021.76
Windom	0	0	0	0	12	0	0	0
NNG Zone	1265	0	-1265	0.91	3	3453.45	0	-3453.45
NNG 3-Party demand								
Producer C	0	0	0			0	0	0
Call Option	375288	0	-375288			375288	0	-375288
Upstream Demand Costs								
SMS	2295	2512	217	2.18	12	60037	65714	5677
FDD - Res	7634	8354	720	1.714	12	157016	171825	14809
FDD - Stor	88030	96326	8296	0.3567	5	157002	171797	14795
FDD - Res	562	615	53	3.3157	12	22361	24470	2109
FDD - Stor	6477	7087	610	0.6901	5	22349	24454	2105
FDD - Res	1317	1441	124	1.714	12	27088	29638	2550
FDD - Stor	15180	16610	1430	0.3567	5	27074	29624	2550
FDD - Res	351	384	33	1.714	12	7219	7898	679
FDD - Stor	4048	4429	381	0.3567	5	7220	7899	679
Viking Pipeline								
Viking FT-(	8945	9005	60	3.4671	12	372159	374655	2496
Viking FT-(	678	682	4	3.4671	3	7052	7094	42
Viking FT-(	1852	0	-1852	3.7671	5	34883	0	-34883
Wadena D	0	2175	2175	1.199752	3	0	7828	7828
Balancing ,	4607	4638	31	1	12	55284	55656	372
GLGTPipeline								
FT Wester	6231	6207	-24	3.458	12	258562	257566	-996
FT Wester	2214	2206	-8	3.458	12	91872	91540	-332
FT Wester	2238	2229	-9	3.458	5	38695	38539	-156
FT Wester	5536	5514	-22	3.458	12	229722	228809	-913
CENTRA Pipeline								

CENTRA Transmission (\$cdn/103M3)				197.709				
Centra Tra	9858	9500	-358	5.811726	12	662537	662537	0
Union Bala	4500	4500	0	1	12	54000	54000	0
Centra MN	9858	9500	-358	1.778	12	210330	202692	-7638
NISKA STORAGE (AECO)								
Niska Stor	666223	648265	-17958	0.954822	1	636125	618978	-17147
AECO/Em	666225	648267	-17958	0.440001	1	293140	285238	-7902
TOTAL DEMAND					7150613	7075048	-75564.5	

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7075048
0.18 Call Option Premiums

MINNESOTA ENERGY RESOURCES - NMU

NNG-NMU

	1/20 Design Day	HDD Regressior Slope	Customer Growth	1/20 Regressior Total	
Peak	103	2082	244	0	25003
Off Peak	55	2082	244	0	14665

GLGT-NMU

	1/20 Design Day	HDD Regressior Slope	Customer Growth	1/20 Regressior Total	
Peak	105.32	1623.04	144.68	0	15825.2
Off Peak	57	1623.04	144.68	0	10073.12

VGT-NMU

	1/20 Design Day	HDD Regressior Slope	Customer Growth	1/20 Regressior Total	
Peak	109	1781.96	100.32	0	11522.6
Off Peak	57	1781.96	100.32	0	7252.88

Centra-NMU

	1/20 Design Day	HDD Regressior Slope	Customer Growth	1/20 Regressior Total	
Peak	107	1498	85	0	7914
Off Peak	57	1498	85	0	4990

Total-NMU

	1/20 Design Day	HDD Regressior Slope	Customer Growth	1/20 Regressior Total	
Peak	0	6985	574	0	60264.8
Off Peak	0	6985	574	0	36981

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Attachment 10
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MINNESOTA ENERGY RESOURCES - NMU
12/13 Winter Portfolio Plan - MERC NMU-NNG Hedging Plan
[TRADE SECRET DATA BEGINS

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MINNESOTA ENERGY RESOURCES - NMU
12/13 Winter Portfolio Plan - MERC GLGT-NMU Hedging Plan
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MINNESOTA ENERGY RESOURCES - NMU
12/13 Winter Portfolio Plan - MERC VGT-NMU Hedging Plan
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MINNESOTA ENERGY RESOURCES - NMU
12/13 Winter Portfolio Plan - MERC Centra-NMU Hedging Plan
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MINNESOTA ENERGY RESOURCES
NNG WINTER PLAN (NMU)
NOVEMBER, 2012 THROUGH MARCH, 2013
[TRADE SECRET DATA BEGINS

PHYSICAL	FIXED PR	Trigger	Trigger	Daily Volumes					Monthly
Deal #	Locked	Exercised	Receipt Point	Nov	Dec	Jan	Feb	Mar	Total

Total

[TRADE SECRET DATA ENDS]

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Attachment 10
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MINNESOTA ENERGY RESOURCES
GLGT/VGT/Centra WINTER PLAN (NMU)
NOVEMBER, 2012 THROUGH MARCH, 2013
[TRADE SECRET DATA BEGINS

PHYSICAL FIXED PR Deal #	Trigger Locked	Trigger Exercised	Receipt Point	Daily Volumes		Jan	Feb	Mar	Monthly Total
				Nov	Dec				
									0

TRADE DATA SECRET ENDS]

PUBLIC DOCUMENT - TRADE SECRET DATA HAS BEEN EXCISED

MINNESOTA ENERGY RESOURCES - NMU

Daily Total Throughput Data - July 1, 2011 through June 30, 2012

Date	Base Variable							7012 574							Total
	0.212	0.4722	0.1437	0.1721	1	Actual	Estimated	Intl Falls	GLGT	NNG	VGT	GLGT TRF	VGT TRF		
	Bemidji Adjusted HDD	Cloquet Adjusted HDD	Fargo Adjusted HDD	Intl. Falls Adjusted HDD	Weighted Adjusted HDD	Total Through-Put *								Through-Put **	
40725	0	0	0	0	0	4379.06	7012	1028	1010.85	1463	513.21	0	364	4379.06	
40726	4.28	0	0	5.3	1.81949	3628.15	8056.387	495	1008.8	1457	440.35	0	227	3628.15	
40727	0	0	0	0	0	3058.07	7012	449	924.24	1334	128.83	0	222	3058.07	
40728	0	0	0	0	0	3700.29	7012	468	1290.46	1301	356.83	0	284	3700.29	
40729	1.07	0	0	1.06	0.409266	5455.4	7246.919	1622	1277.65	1494	631.75	0	430	5455.4	
40730	0	0	0	0	0	5678.26	7012	1749	1183.5	1666	618.76	0	461	5678.26	
40731	0	0	0	0	0	5771.43	7012	1714	1100.61	1929	581.82	0	446	5771.43	
40732	0	0	0	0	0	4216.25	7012	1380	642.4	1588	240.85	0	365	4216.25	
40733	0	0	0	0	0	3512.25	7012	502	1009.48	1382	390.77	0	228	3512.25	
40734	0	0	0	0	0	4137.63	7012	633	953.49	1489	730.14	0	332	4137.63	
40735	3.27	0	0	2.2	1.07186	6513.57	7627.248	1737	1194.38	1763	1317.19	0	502	6513.57	
40736	8.4	6.36	0	9.36	6.394848	6499.65	10682.64	1735	1213.15	1912	1166.5	0	473	6499.65	
40737	1.09	6.36	0	3.15	3.776387	6289.83	9179.646	1709	1106.02	1881	1121.81	0	472	6289.83	
40738	3.33	7.42	0	0	4.209684	6686.05	9428.359	1672	1242.7	1917	1369.35	0	485	6686.05	
40739	0	0	0	0	0	4439.65	7012	1341	667.12	1422	652.53	0	357	4439.65	
40740	0	0	0	0	0	3442.75	7012	467	1040.45	1167	544.3	0	224	3442.75	
40741	0	0	0	0	0	4058.74	7012	514	1209.21	1288	720.53	0	327	4058.74	
40742	0	0	0	0	0	4791.33	7012	622	1372.06	1381	982.27	0	434	4791.33	
40743	0	0	0	0	0	4852.4	7012	605	1468.01	1425	944.39	0	410	4852.4	
40744	0	0	0	0	0	4730.4	7012	630	1158.24	1448	1083.16	0	411	4730.4	
40745	0	0	0	0	0	5233.67	7012	671	1591.28	1577	972.39	0	422	5233.67	
40746	0	0	0	0	0	3780.09	7012	695	788.38	1542	424.71	0	330	3780.09	
40747	3.21	11.99	0	8.48	7.801606	3966.61	11490.12	706	1122.31	1546	323.3	0	269	3966.61	
40748	0	0	0	0	0	4956.54	7012	726	1803.38	1529	564.16	0	334	4956.54	
40749	1.07	0	0	5.3	1.13897	6023.59	7665.769	1706	1532.32	1450	868.27	0	467	6023.59	
40750	0	0	0	0	0	5527.92	7012	1627	1249.83	1388	835.09	0	428	5527.92	
40751	0	0	0	0	0	4793.03	7012	1620	516.05	1424	800.98	0	432	4793.03	
40752	0	0	0	0	0	5259.14	7012	1627	841.88	1370	977.26	0	443	5259.14	
40753	0	0	0	0	0	4193.41	7012	1418	533.42	1303	592.99	0	346	4193.41	
40754	0	0	0	0	0	6416.44	7012	576	4133.46	1285	196.98	0	225	6416.44	
40755	0	0	0	0	0	4502.23	7012	557	1769.25	1463	391.98	0	321	4502.23	
40756	0	0	0	0	0	6798.76	7012	1542	2477.78	1693	656.98	0	429	6798.76	
40757	0	0	0	0	0	5529.89	7012	1586	1235.89	1535	750	0	423	5529.89	
40758	0	0	0	0	0	5364.01	7012	1526	1311.07	1368	727.94	0	431	5364.01	
40759	0	0	0	0	0	5049.1	7012	1548	674.73	1454	941.37	0	431	5049.1	
40760	0	0	0	0	0	3942.2	7012	1252	509.97	1384	441.23	0	355	3942.2	
40761	0	0	0	0	0	3102.67	7012	549	495.23	1349	459.44	0	250	3102.67	
40762	0	1.02	0	0	0.481644	4616.22	7288.464	604	1550.83	1423	709.39	0	329	4616.22	
40763	0	0	0	0	0	5628.03	7012	1686	1006.85	1481	971.18	0	483	5628.03	
40764	7.7	6.54	0	9.63	6.377911	5895.26	10672.92	1573	1153.63	1620	1094.63	0	454	5895.26	
40765	0	0	0	1.03	0.177263	5349.32	7113.749	1370	845.37	1534	1159.95	0	440	5349.32	
40766	0	0	0	0	0	4424.91	7012	1305	333.86	1440	887.05	0	459	4424.91	
40767	2.06	0	0	0	0.43672	4230.05	7262.677	1133	586.63	1397	746.42	0	367	4230.05	
40768	1.02	0	0	2.06	0.570766	3493.9	7339.62	466	950.28	1377	467.62	0	233	3493.9	
40769	0	0	0	0	0	4367.04	7012	641	1162.44	1425	805.6	0	333	4367.04	
40770	0	0	0	0	0	5330.31	7012	1631	637.95	1597	1005.36	0	459	5330.31	
40771	0	0	0	1.08	0.185868	5238.25	7118.688	1167	511.55	1881	1224.7	0	454	5238.25	
40772	0	0	0	3.24	0.557604	4169.32	7332.065	727	224.17	1751	990.15	0	477	4169.32	
40773	0	0	0	0	0	4367.66	7012	1539	78.94	1357	928.72	0	464	4367.66	
40774	6.48	4.32	0	9.72	5.086476	4526.33	9931.637	1657	160.27	1442	848.06	0	419	4526.33	
40775	7.35	2.14	0	10.5	4.375758	4417.51	9523.685	1516	603.7	1456	560.81	0	281	4417.51	
40776	4.16	4.12	0	3.06	3.35401	5994.79	8937.202	1513	1934.14	1545	643.65	0	359	5994.79	
40777	0	0	0	0	0	5229.46	7012	1571	817.88	1473	827.58	0	540	5229.46	
40778	0	0	0	0	0	4927.29	7012	1441	504.15	1583	831.14	0	568	4927.29	
40779	2.24	2.2	0	5.45	2.451665	5891.22	8419.256	1607	1206.11	1511	1042.11	0	525	5891.22	
40780	0	0	0	0	0	5451.09	7012	1503	765.56	1381	1279.53	0	522	5451.09	
40781	4.36	0	0	5.3	1.83645	4469.85	8066.122	1204	547.13	1349	1006.72	0	363	4469.85	
40782	6.12	2.08	0	7.21	3.520457	6151.26	9032.742	479	3179.46	1359	834.8	0	299	6151.26	
40783	1.04	5.05	0	2.06	2.959616	5710.37	8710.82	659	2214.52	1584	881.85	0	371	5710.37	
40784	0	0	0	0	0	11319.42	7012	1580	6554.18	1574	1117.24	0	494	11319.42	
40785	0	0	0	0	0	12620.84	7012	1629	7739.5	1519	1213.34	0	520	12620.84	
40786	0	3.18	0	1.07	1.685743	12973.17	7979.616	1611	8107.01	1595	1190.16	0	470	12973.17	
40787	0	0	0	0	0	11962.91	7012	1619	7579.8	1566	733.11	0	465	11962.91	
40788	5.2	3.12	0	8.32	4.007536	7635.02	9312.326	1362	3901.62	1523	446.4	0	402	7635.02	
40789	12.54	1.09	5.75	6.6	5.135313	3879.46	9959.67	599	1021.11	1549	420.35	0	290	3879.46	
40790	16.8	16.96	7.42	18.9	15.88906	5249.13	16132.32	761	1742.67	1906	528.46	0	311	5249.13	
40791	11.55	13.13	0	12.36	10.77574	7276.01	13197.28	1604	2188.12	2009	1030.89	0	444	7276.01	
40792	6.42	7.21	0	6.24	5.839506	11816.34	10363.88	1738	-1958.26	10171	1312.6	0	553	11816.34	
40793	4.08	0	0	2.02	1.212602	11382.24	7708.034	1448	-1967.75	10027	1328.99	0	546	11382.24	
40794	0	0	0	0	0	7043.32	7012	1439	-6761.85	10559	1342.17	0	465	7043.32	
40795	0	0	0	0	0	5352.82	7012	1291	-9177.74	11654	1185.56	0	400	5352.82	
40796	0	0	0	0	0	4288.44	7012	469	-6456.88	8919	1086.32	0	271	4288.44	
40797	0	0	0												

40807	28.6	20.9	23.94	22.4	23.2274	13260.13	20344.53	3110	2424.79	4058	2631.34	0	1036	13260.13
40808	24.72	21.63	16.8	25.75	22.30006	13700.17	19812.24	3080	2560.55	4445	2671.62	0	943	13700.17
40809	18.9	16.32	8.88	18.72	16.21087	10753.06	16317.04	2104	2360.43	3583	1989.63	0	716	10753.06
40810	18.72	19.19	5.5	19.57	17.18851	9226.22	16878.2	1266	2103.73	3753	1645.49	0	458	9226.22
40811	19.08	13.65	9.72	17.34	14.87147	8951.72	15548.22	1248	2232.7	3214	1743.02	0	514	8951.72
40812	14.28	5.4	6.12	13.39	8.761103	8647.69	12040.87	2174	1910.71	2263	1661.98	0	638	8647.69
40813	9.09	6.18	0	8.08	6.235844	7914.88	10591.37	2022	1521.06	2138	1678.82	0	555	7914.88
40814	2.2	0	0	0	0.4664	7551.05	7279.714	2040	1409.03	2060	1472.02	0	570	7551.05
40815	18.08	14.82	15.08	13.8	15.37294	10295.63	15836.07	2532	1898.77	3079	1998.86	0	787	10295.63
40816	21.4	24.96	15.26	27.3	23.2141	11711.25	20336.9	2589	2502.03	4097	1737.22	0	786	11711.25
40817	14.56	18.9	5.85	15.75	15.56252	9891.57	15944.89	1277	3319.24	3712	1114.33	0	469	9891.57
40818	4.2	7.21	0	5.25	5.198487	7586.42	9995.932	956	2761.64	2561	875.78	0	432	7586.42
40819	0	10.3	0	0	4.86366	7870.61	9803.741	1615	1960.7	2665	1119.91	0	510	7870.61
40820	0	3.12	0	0	1.473264	6707.6	7857.654	1720	1001.65	2203	1319.95	0	463	6707.6
40821	0	10.7	0	1.08	5.238408	6979.5	10018.85	1466	1441.68	2204	1395.82	0	472	6979.5
40822	0	4.24	0	0	2.002128	6227.91	8161.221	1807	897.19	1850	1201.72	0	472	6227.91
40823	0	0	0	0	0	5469.3	7012	1717	899.01	1526	962.29	0	365	5469.3
40824	11.66	0	8.64	11.77	5.739105	5922.94	10306.25	1964	1002.12	1754	829.82	0	373	5922.94
40825	13.08	9.63	7.7	12.84	10.6365	7330.94	13117.35	1945	1321.88	2335	1158.06	0	571	7330.94
40826	11	7.28	9.81	1.08	7.365181	7528.87	11239.61	1945	1381.74	2134	1370.13	0	698	7528.87
40827	7.49	2.1	2.22	5.3	3.810644	6783.71	9199.31	1737	1180.72	2178	1120.99	0	567	6783.71
40828	14.04	6.18	6.66	9.27	8.447085	8767.36	11860.63	2229	2146.98	2423	1319.38	0	649	8767.36
40829	23.73	18.53	15.54	18.7	19.23199	12846.67	18051.16	2759	3264.98	3930	1918.69	0	974	12846.67
40830	29	22.23	21.66	27.12	24.4249	15064.39	21031.89	2906	4048.83	5331	1679.56	178	921	15064.39
40831	25.3	20.34	18.08	25.3	21.92037	13528.71	19594.29	2078	4245.32	4961	1390.39	223	631	13528.71
40832	30	22.42	23.6	26.18	24.84362	15342.72	21272.24	2350	4195.08	5598	2039.64	245	915	15342.72
40833	27.84	21.66	23.2	29.38	24.52007	18526.51	21086.52	3705	4475.05	6207	2666.46	295	1178	18526.51
40834	33.17	27.25	29.64	30.52	29.41125	21009.79	23894.06	4052	4629.97	7748	2979.82	338	1262	21009.79
40835	36.4	28.89	32.1	27.56	30.7145	20454.12	24642.13	3819	4575.45	7107	3094.67	436	1422	20454.12
40836	29.87	29.96	27.3	31.93	29.89772	20093.56	24173.29	3656	4597.68	7248	3080.88	647	864	20093.56
40837	26.5	24.38	20.14	26.25	24.54198	15967.67	21099.1	2828	3862.8	5650	2269.87	490	867	15967.67
40838	22.26	19.76	15.4	24.15	20.41899	13243.41	18732.5	1722	3770.31	5051	1684.1	318	698	13243.41
40839	28.62	26.5	17.12	23.54	25.09212	16626.35	21414.88	2180	4609.95	6388	2338.4	340	770	16626.35
40840	27.81	23.1	18.9	30.9	24.83736	18690.47	21268.64	3680	4906.73	6072	2568.74	387	1076	18690.47
40841	27.54	29.68	20.8	28.56	27.75751	19826.82	22944.81	3575	4567.78	7243	2994.04	581	866	19826.82
40842	27.81	25.5	28.62	26.52	26.61361	19624.29	22288.21	3684	4396.63	6898	3128.66	591	926	19624.29
40843	29.58	27.81	28.08	32.24	28.98644	21390.04	23650.22	3900	4560.29	8120	3229.75	612	968	21390.04
40844	35.31	28.62	28.08	36.4	31.29962	20127.37	24977.98	3978	3792.57	7744	2890.8	636	1086	20127.37
40845	32.1	26.78	27.75	32.55	29.04025	17544.63	23681.1	3570	3573.22	6760	2291.41	561	789	17544.63
40846	29.4	22.88	30.52	28.35	26.3015	18627.58	22109.06	3513	3761.28	7055	2929.3	573	796	18627.58
40847	28.34	23.32	20.34	26.5	24.50329	18211.94	21076.89	3415	3690.5	6719	2907.44	573	907	18211.94
40848	30.24	23.32	25.53	29.4	26.15099	18857.33	22022.67	3735	3506.53	7195	2822.8	615	983	18857.33
40849	34.98	32.86	30.24	36.04	33.48022	22590.77	26229.65	4319	4590.1	8329	3477.67	654	1221	22590.77
40850	28.34	26.25	27.6	28.35	27.24849	20886.19	22652.63	4134	4091.8	8064	2834.39	641	1121	20886.19
40851	24.36	24.61	21.25	21.8	23.59057	18199.17	20552.99	3304	4043.43	7239	2220.74	581	811	18199.17
40852	23	21.8	18.3	19.8	21.20725	13495.33	19184.96	1856	3222.65	5822	1654.68	543	397	13495.33
40853	30.42	25.3	31.2	26.68	27.47077	19185.41	22780.22	2853	4114.81	7840	2705.6	621	1051	19185.41
40854	40.28	34.24	33.79	42	36.79131	24223.37	28130.21	3713	5339.8	9446	3514.57	724	1486	24223.37
40855	34.32	31.31	31.61	31.93	32.09793	22290.57	25436.21	3435	4362.92	8891	3511.65	686	1404	22290.57
40856	39.1	32.19	36.58	35.2	34.80378	23951.49	26989.37	3795	4930.69	9398	3557.8	752	1518	23951.49
40857	39.96	37.45	35.84	41.34	38.42023	26350.93	29065.21	4003	5129.98	10905	4206.95	710	1396	26350.93
40858	31.5	29.68	23.76	31.8	29.57999	21143.79	23990.91	3340	4335.63	8915	2830.16	617	1106	21143.79
40859	27.56	29.68	21.8	24.84	27.26524	17089.19	22662.25	2765	3682.78	7134	2066.41	569	872	17089.19
40860	36.72	30.24	30.52	36.04	32.65218	22469.54	25754.35	3348	5190.62	9004	3125.92	645	1156	22469.54
40861	36.38	29.16	35.64	34.24	32.49608	23924.19	25664.75	4652	4663.29	9243	3291.9	703	1371	23924.19
40862	42.9	36.63	42.12	38.52	39.07342	27333.18	29440.14	5361	5354.47	10124	3919.71	829	1745	27333.18
40863	56.5	45.51	54.88	49.5	49.87303	37368.99	35639.12	6068	6730.89	13009	4860.1	970	2131	37368.99
40864	52.43	46.01	49.22	54.06	49.21772	33154.35	35262.97	6287	6566.02	12877	4360.33	953	2111	33154.35
40865	44.94	37.1	44.69	44.28	41.08844	28944.44	30596.77	5402	5641.75	11276	3835.69	903	1886	28944.44
40866	56.16	50.6	64.4	52.92	54.16105	34690.83	38100.44	5521	7533.26	14028	4485.57	984	2139	34690.83
40867	53.04	51.5	58.86	59.74	54.30222	36432.55	38181.47	5589	8458.46	14551	4816.09	967	2051	36432.55
40868	49.22	42.84	45.51	50.47	45.88936	33155.82	33352.49	5025	7516.15	13055	4701.67	903	1955	33155.82
40869	36.38	35.36	33.6	36.38	35.49887	26439.18	27388.35	4087	5599.65	10472	3850.53	816	1614	26439.18
40870	27.82	27.5	28	24.61	27.14232	20908.58	22591.69	3100	4586.89	8599	2832.69	697	1093	20908.58
40871	27.04	28.62	24.61	29.4	27.84304	19287.18	22993.91	2930	4286.98	7993	2542.2	639	896	19287.18
40872	31.03	28.34	30.51	33.48	30.1067	21115.69	24293.25	3349	5089.34	8470	2537.35	678	992	21115.69
40873	39.9	36.16	42.48	39.96	38.51504	25178.05	29119.64	3681	5660.83	10569	3292.22	713	1262	25178.05
40874	43.87	39.96	42.9	41.73	41.51602	28418.07	30842.19	4188	6100.73	12022	3923.34	782	1402	28418.07
40875	41.04	40.33	36.3	48.15	41.24723	29029.81	30687.91	5174	6125.67	11431	4078.14	773	1448	29029.81
40876	43.86	38.48	42.12	47.38	41.67532	30080.83	30933.63	5363	6495.13	11805	4070.7	802	1545	30080.83
40877	46.01	40.28	45.6	49.22	43.79782	29971.96	32151.95	5681	5893.23	11886	4031.73	848	1632	29971.96
40878	52.92	54.06	51.98	57.78	54.15964	37349.44	38099.63	6239	7989.13	15003	5143.31	937	2038	37349.44
40879	41.44	48.16	38.61	42.9	44.45778	31802.78	32530.77	5284	6770.88	13266	4127.9	834	1520	31802.78
40880	47.52	41.04	42.51	47.52	43.74021	29438.41	32118.88	4684	6290.07	11979	3984.34	856	1645	29438.41
40881	57.24	50.76	57.72	51.94	53.33699	36489.88	37627.43	5489	8604.75	14371	5019.13	991	2015	36489.88
40882	65.92	61.8	61.04	67.98	63.62781	45967.59	43534.36	7876	10693.9	17247	6332.69	1175	2643	45967.59
40883	56.61	57.2	52.2	57.72	56.44591	40462.79	39411.95	6833</						

40901	47.46	43.6	39.9	42.9	43.76616	26459.32	32133.78	3910	5930.75	11039	3542.57	785	1252	26459.32
40902	36.3	37.06	32.77	38.15	36.47	25847.76	27945.78	3737	5860.07	11191	3236.69	733	1090	25847.76
40903	39.78	37.12	40.8	45.6	39.67214	25459.8	29783.81	4151	5270.82	10451	3351.98	851	1384	25459.8
40904	55.12	54.06	55.59	64.66	56.32884	38043.53	39344.75	5897	9584.14	15039	4591.39	1019	1913	38043.53
40905	46.2	46.8	39.24	51.94	46.47102	32808.64	33686.37	4842	8224.89	13457	3957.75	865	1462	32808.64
40906	46.35	44.72	42	47.84	45.21165	32693.45	32963.49	4873	8073.8	13179	4116.65	876	1575	32693.45
40907	45.76	43.86	38.88	53.56	45.21654	31793.99	32966.3	4767	7762.39	13035	3992.6	840	1397	31793.99
40908	41.81	39.96	39.9	42.9	40.84955	28752.63	30459.64	4165	6834.08	11871	3691.55	789	1402	28752.63
40909	64.13	54.28	59	60.18	58.06185	39119.67	40339.5	5808	9315.67	15784	5214	987	2011	39119.67
40910	60.99	64.2	62.16	66.78	63.67035	45942.5	43558.78	7418	11471	18053	5783.5	1063	2154	45942.5
40911	49.05	58.3	42.56	53.41	53.23559	39872.26	37569.23	6204	9861.29	15900	5148.97	940	1818	39872.26
40912	40.8	38.48	34.24	38.76	38.41074	31598.59	29059.76	5193	7099.95	12740	4256.64	845	1464	31598.59
40913	31.32	31.36	24.64	31.9	30.47879	23819.62	24506.83	4398	4999.55	9614	2943.07	748	1117	23819.62
40914	41.44	38.76	35.03	43.68	39.63889	27407.78	29764.72	5028	5975.29	10942	3336.49	810	1316	27407.78
40915	43.68	43.05	39.22	44.29	42.84659	29080.98	31605.94	4482	6863.84	12216	3450.14	793	1276	29080.98
40916	39.24	39.24	38.42	39.6	39.18412	27245.35	29503.69	3977	6625.29	11076	3514.06	797	1256	27245.35
40917	37.1	32.1	26.16	36.75	33.10669	27173.25	26015.24	4649	6879.84	10088	3618.41	770	1168	27173.25
40918	37.45	29.12	32.19	31.5	31.73672	25468.75	25228.88	4359	6638.55	9182	3286.2	813	1190	25468.75
40919	65.55	50.6	62.4	61.02	57.25834	43282.16	39878.29	7493	10328.17	15738	6067.99	1182	2473	43282.16
40920	67.58	69	72.32	65.4	68.55648	48072.49	46363.42	7505	11270.74	18633	6578.75	1314	2771	48072.49
40921	63.24	60.18	62.64	61.8	61.46102	44336.04	42290.63	6978	10824.18	17278	5782.86	1126	2347	44336.04
40922	52.5	53.04	42.12	54.6	51.62479	38327.98	36644.63	5686	9675.88	15651	4773.1	922	1620	38327.98
40923	51.06	41.73	47.56	48.84	45.76936	33130.57	33283.61	5195	8232.7	12771	4362.87	910	1659	33130.57
40924	73.03	59.89	71.92	64.9	65.26661	45499.81	44475.04	7930	11396.45	15964	6347.36	1263	2599	45499.81
40925	77.04	68.48	70.62	74.55	71.64689	53440.6	48137.31	9094	13589.72	19506	7004.88	1364	2882	53440.6
40926	82.84	71.68	77.97	86.4	77.48311	57292.88	51487.3	9881	13614.54	21428	7622.34	1557	3190	57292.88
40927	81.62	79.18	75.6	81.9	79.65095	57621.77	52731.64	9657	13093.68	22462	7837.09	1515	3057	57621.77
40928	72.8	69.01	62.4	75.19	69.9272	52769.14	47150.21	8815	12378.41	20524	6924.73	1317	2810	52769.14
40929	61.05	59.4	58.8	64.8	60.59292	44682.06	41792.34	7219	10719.75	17515	6053.31	1079	2096	44682.06
40930	46.2	46.8	46.2	46.2	46.48332	36469.31	33693.43	5758	8701.03	14162	5728.28	926	1644	36469.31
40931	55.5	51.52	61.6	55	54.41116	40678.57	38244.01	5819	10438.54	15165	6080.03	1065	2111	40678.57
40932	47.84	46.2	52.17	51.5	48.3177	36858.15	34746.36	5601	9629.74	13382	5298.41	994	1953	36858.15
40933	43.29	40.33	39.44	41.04	40.95182	32200.66	30518.34	4765	7804.06	12322	4775.6	895	1639	32200.66
40934	47.96	43.2	39.96	49.22	44.77957	32204.66	32715.48	4841	8201.02	12616	4211.64	833	1502	32204.66
40935	49.72	48.6	48.72	46.44	48.48295	34834.17	34841.21	5043	8748.79	14044	4439.38	872	1687	34834.17
40936	64.38	59.36	58.86	64.38	61.21633	38590.7	42150.17	6046	9147.79	15606	4900.91	941	1949	38590.7
40937	64.2	58.8	61.6	66.34	61.64479	40176.79	42396.11	6199	9248.66	16429	5245.13	978	2077	40176.79
40938	45.58	45.15	36.72	49.22	44.73022	32928.3	32687.14	5049	8144.9	13037	4313.4	836	1548	32928.3
40939	40.33	34.56	41.04	40.28	37.69883	30168.97	28651.13	4578	7541.03	11400	4291.94	852	1506	30168.97
40940	41.6	35.36	38.85	35.02	37.12588	28630.6	28322.25	4115	7258.24	10798	4185.36	838	1436	28630.6
40941	40.4	32.64	39.78	35.02	35.72074	28752.94	27515.7	4038	7166.4	10609	4535.54	859	1545	28752.94
40942	45.45	40.56	40.17	44.72	42.25657	28294.86	31267.27	4414	5997.06	11300	4150.8	862	1541	28294.86
40943	48.15	37.06	41.34	43.87	41.19812	26843.42	30659.72	4363	5717.37	10598	3862.05	833	1470	26843.42
40944	39.59	38.88	38.15	39.24	38.98758	28110.15	29390.87	3971	6117.1	11630	4161.05	821	1410	28110.15
40945	57.2	47.96	57.12	58.32	53.01813	33266.27	37444.41	5746	6977.78	13091	4458.49	1018	1975	33266.27
40946	59.36	53.5	56.18	59.85	56.22027	38791.5	39282.44	6355	7889.99	15497	5854.51	1129	2066	38791.5
40947	50.6	47.96	49.5	53.41	49.67892	34458.01	35527.7	5389	7060.29	13732	5302.72	992	1982	34458.01
40948	62.7	55.37	61.88	66.6	59.79213	38833.24	41332.68	6873	7716.67	14936	5652.57	1216	2439	38833.24
40949	76.16	70.68	73.26	73.7	72.73225	48585.93	48760.31	7686	9871.42	19605	7260.51	1324	2839	48585.93
40950	72.6	66.67	62.64	70.4	67.98998	45729.34	46038.25	6954	9753.39	18800	6509.95	1189	2523	45729.34
40951	53.55	50.29	52.8	60.9	53.16779	38667.28	37530.31	5877	8905.45	15197	5566.83	1033	2088	38667.28
40952	53.04	44.72	42.12	46.92	46.48884	34970.41	33696.59	5200	7880.68	13631	5521.73	947	1790	34970.41
40953	43.26	36.05	38.48	42.23	38.99129	29963.1	29393	4380	6635.73	11844	4764.37	859	1480	29963.1
40954	41.04	36.04	39.59	34.24	37.30036	28211.27	28422.4	4209	6191.76	10771	4704.51	861	1474	28211.27
40955	42.4	36.75	38.5	40.28	38.80679	29428.28	29287.1	4401	6440.48	11586	4617.8	875	1508	29428.28
40956	53	47.7	45.36	55.12	49.76432	31668.42	35576.72	5191	6433.28	12638	4827.14	918	1661	31668.42
40957	48.41	44.29	39.96	50.96	45.68913	30635.21	33237.56	4721	6565.19	12745	4315.02	857	1432	30635.21
40958	42.9	36.75	31.32	39.9	37.81562	25591.02	28718.17	3705	5654.45	10691	3617.57	764	1159	25591.02
40959	38.5	33.17	35.97	33.48	34.75567	27839.74	26961.76	4809	5831.24	10869	4225.5	783	1322	27839.74
40960	44.85	39.55	48.84	44	42.77442	31189.46	31564.52	5655	6533.95	11891	4556.51	868	1685	31189.46
40961	52	41.6	48.88	45.32	45.49115	32139.87	33123.92	5830	6816.41	12083	4787.46	884	1739	32139.87
40962	50.29	46.8	45.36	40.56	46.25905	32515.61	33564.69	5884	6627.87	12502	4772.74	924	1805	32515.61
40963	68.32	53.76	62.16	54.5	58.18115	37837.74	40407.98	6284	7658.9	14848	5727.84	1069	2250	37837.74
40964	58.86	46.2	55.5	47.7	50.47848	32565.74	35986.65	5046	7331.54	12899	4570.2	912	1807	32565.74
40965	55.5	50.4	58.5	54.39	53.33185	35379.75	37624.48	5539	8214.27	13949	4825.48	963	1889	35379.75
40966	52.5	45.32	54.57	48.88	48.78406	34897.03	35014.05	6339	7617.72	12722	5034.31	1042	2142	34897.03
40967	45.2	43.32	41.4	42.9	43.37037	32454.74	31906.59	5567	7277.9	12558	4758.84	840	1453	32454.74
40968	37.8	40.25	41.07	39.22	39.67117	30870.19	29783.25	4961	7141.9	11941	4529.29	849	1448	30870.19
40969	40.28	34.34	41.07	35.36	36.74192	28596.35	28101.86	4897	6270.94	10775	4482.41	780	1391	28596.35
40970	46.2	37.1	53.82	41.73	42.22869	29059.12	31251.27	4868	6148.56	10860	4752.56	863	1567	29059.12
40971	65.72	48.15	62.06	58.3	55.62052	34116.68	38938.18	5048	7016.09	13551	5550.59	985	1966	34116.68
40972	57.68	56.1	55.12	61.61	57.24241	35716.53	39869.14	5342	7920.14	14214	5350.39	964	1926	35716.53
40973	47.3	47.7	41.76	52.32	47.55672	32453.99	34309.56	4737	6848.65	13268	5141.34	880	1579	32453.99
40974	31.32	34.32	38.28	27.82	33.1344	23706.54	26031.15	3436	5066.08	9517	3785.46	773	1129	23706.54
40975	51.06	43.29	49.02	47.3	46.45076	32369.79	33674.74	5025	6641	12477	5413.79	952	1861	32369.79
40976	58.76	53.11	50.4	64										

40995	24.15	16.38	26.91	21.28	20.38369	18915.46	18712.24	3644	3231.57	7117	3319.89	704	899	18915.46
40996	34.98	28.89	27.5	31.03	30.34963	22438.12	24432.69	4208	5233.53	8356	3078.59	698	864	22438.12
40997	33.17	31.61	28.62	33	31.75028	25675.92	25236.66	4631	5773.73	9727	3776.19	683	1085	25675.92
40998	26.4	29.68	14.69	29.16	26.74109	21600.84	22361.38	3795	4912.37	8707	2878.47	590	718	21600.84
40999	16.05	22.88	5.45	23.1	18.96521	15930.94	17898.03	2113	3773.63	7021	2245.31	572	206	15930.94
41000	14.43	21.47	2.26	19.98	16.96061	14685.12	16747.39	2133	3793	6122	1876.12	581	180	14685.12
41001	22.68	15.12	20.52	21.6	18.61391	17048.8	17696.38	3752	3548.71	6387	2102.09	665	594	17048.8
41002	26.78	23.32	19.08	27.3	24.12919	15431.7	20862.16	3285	3220.65	5599	2245.05	663	419	15431.7
41003	23.1	28.34	12.21	26.75	24.6376	15304.54	21153.98	3125	3325.23	5720	2132.31	498	504	15304.54
41004	22.2	23.32	11.9	23.54	21.47937	17180.42	19341.16	3104	4137.07	6787	2233.35	638	281	17180.42
41005	27.84	23.54	21.78	26.4	24.69089	13757.61	21184.57	2272	3670.02	5573	1518.59	607	117	13757.61
41006	27.6	21.28	23.2	25.99	23.70634	16822.07	20619.44	2631	4189.76	6681	2053.31	673	594	16822.07
41007	42.94	35.84	34.2	41.44	38.07329	18022.45	28866.07	2835	4910.16	6671	2301.29	683	622	18022.45
41008	42.51	38.85	37.74	41.04	39.84331	29780.47	29882.06	5559	6991.64	11048	4007.83	847	1327	29780.47
41009	36.05	26.25	34.32	31.2	30.33915	27158.73	24426.67	5095	5997.82	10333	3770.91	802	1160	27158.73
41010	28.08	27.3	16.95	25.2	25.61666	20181.1	21715.96	3874	4544.83	7206	3126.27	645	785	20181.1
41011	23.52	23.76	15.96	20.16	21.9687	14950.68	19622.03	3006	2951.02	5994	2104.66	566	329	14950.68
41012	13.32	6.66	9.63	22.26	11.18347	16016.15	13431.31	3033	3375.22	6067	2415.93	540	585	16016.15
41013	25.76	20.7	22.14	27.5	23.14993	10060.29	20300.06	1968	2710.89	3569	1165.4	426	221	10060.29
41014	34.41	38.85	33.04	40.7	37.39221	20025.98	28475.13	3135	4393.45	8004	3077.53	603	813	20025.98
41015	30.24	29.68	24.64	34.24	29.85925	26506.94	24151.21	3610	6212.79	11190	3766.15	670	1058	26506.94
41016	26.75	28.08	18.87	34.56	27.58977	17993.25	22848.53	2646	4416.81	7381	2486.44	525	538	17993.25
41017	27.04	29.96	20.33	29.58	27.89173	20145.37	23021.85	3177	4465.31	8251	3038.06	568	646	20145.37
41018	26	26.25	21.2	28.89	25.92566	18462.04	21893.33	2613	4400.82	7372	2947.22	602	527	18462.04
41019	30.8	31.61	19.89	30.52	29.56653	14889.28	23983.19	2393	3365.74	6004	2151.54	641	334	14889.28
41020	24.96	28.62	17.44	23.46	25.34948	20660.19	21562.6	3072	4924.29	8669	2570.9	661	763	20660.19
41021	19.95	18.54	9.81	18.54	17.58442	17745.14	17105.46	2093	4039.78	7845	2770.36	580	417	17745.14
41022	14.84	12.6	4.44	20.14	13.19992	13666.42	14588.76	2742	3219.72	4862	1926.7	573	343	13666.42
41023	14.43	21.2	6.96	22.68	17.97318	11509.39	17328.61	2531	2777.86	3854	1644.53	501	201	11509.39
41024	27	26.16	21.47	28.89	26.13396	15654.88	22012.89	3473	3557.06	6046	1615.82	636	327	15654.88
41025	25.76	28.6	19.04	29.96	26.8582	17227.88	22428.61	3560	3787.31	6161	2485.57	683	551	17227.88
41026	22.6	28	21.66	20.71	24.68953	16061.99	21183.79	3202	2826.19	6472	2383.8	701	477	16061.99
41027	17.76	19.26	16.38	16.05	17.9757	14294.87	17330.05	1694	3309.66	6278	2232.21	650	131	14294.87
41028	12.96	14.7	7.63	10.7	12.62676	12403.66	14259.76	1366	3378.07	5181	1601.59	643	234	12403.66
41029	17.28	16.8	1.1	9.54	13.39622	11759.5	14701.43	1829	2801.92	4399	1961.58	560	208	11759.5
41030	6.36	0	3.24	6.48	2.929116	10894	8693.313	1950	2331	4218	1741	529	125	10894
41031	10.6	10.9	5.55	11.77	10.21733	7634	12876.75	1652	1487	2489	1365	484	157	7634
41032	19.8	23.73	8.8	18.53	19.85648	9927	18409.69	2381	2457	2973	1384	524	208	9927
41033	15.12	23.31	4.32	15.12	17.43536	13090	17019.9	2316	3179	5116	1632	559	288	13090
41034	15.75	21.6	2.18	16.2	16.63981	11281	16563.25	1130	3576	4839	1330	387	19	11281
41035	17.76	14.04	10.53	13.91	14.30188	14106	15221.28	1600	5334	4837	1745	448	142	14106
41036	23.76	14.42	14.82	23.1	17.95139	13567	17316.1	2502	4481	3686	1977	557	364	13567
41037	17.51	14.84	12.84	17.51	15.57815	13722	15953.86	2860	3325	4503	1988	577	469	13722
41038	7.7	11.77	0	12.84	9.399958	10262	12407.58	1981	2594	3342	1620	501	224	10262
41039	19.21	11.88	10.53	19.8	14.603	7299	15394.12	1738	1320	2448	1162	459	172	7299
41040	16.2	12.84	9.81	16.2	13.69517	9924	14873.02	1874	2172	3617	1578	511	172	9924
41041	2.22	2.2	0	5.5	2.45603	7019	8421.761	908	2027	2761	928	375	20	7019
41042	3.12	0	0	6.18	1.725018	6194	8002.16	837	1736	2242	936	353	90	6194
41043	19.21	12.21	6.96	17.92	13.92227	7160	15003.38	1829	1463	1914	1396	421	137	7160
41044	17.85	15.45	7.7	19.57	15.55418	8057	15940.1	2124	956	2690	1620	471	196	8057
41045	0	8.64	0	4.36	4.830164	8231	9784.514	1820	1887	2465	1473	450	136	8231
41046	0	0	0	0	0	6657	7012	1413	1369	2049	1342	395	89	6657
41047	6.78	0	4.6	0	2.09838	5459	8216.47	1420	1204	1586	857	344	48	5459
41048	15.26	19.62	6.54	18.19	16.56998	5440	16523.17	876	1531	1713	878	416	26	5440
41049	13.52	10.3	1.12	15.45	10.54979	9150	13067.58	1088	3045	3192	1330	391	104	9150
41050	0	7.42	0	5.5	4.450274	7821	9566.457	1870	2214	2083	1111	422	121	7821
41051	6.54	5.3	3.27	0	4.359039	6993	9514.088	1729	1508	2349	932	378	97	6993
41052	12.48	9.54	6.6	7.35	9.363903	2630	12386.88	1805	-3071	2230	1148	410	108	2630
41053	17.44	11	13.32	17.6	13.83452	7824	14953.02	1931	1188	2930	1164	440	171	7824
41054	18.53	17.44	9.2	21.2	17.13409	10639	16846.97	1965	4782	2482	761	486	163	10639
41055	9.81	19.8	0	15.68	14.12781	7151	15121.36	972	2033	2953	723	409	61	7151
41056	10.9	7.42	7.84	6.42	8.046014	2843	11630.41	1124	-2243	3194	336	402	30	2843
41057	23.31	14.43	18.4	22.68	18.30287	7183	17517.85	2076	1100	2598	823	437	149	7183
41058	19.57	19.76	16.64	18.54	19.06141	9155	17953.25	2625	-191	3590	2138	493	500	9155
41059	16.16	15.3	8.4	15.15	14.46498	15206	15314.9	2432	4260	3580	4194	446	294	15206
41060	13.26	13.26	5.4	12.24	11.95498	17133	13874.16	1094	9000	2690	3760	407	182	17133
41061	10.4	8.64	0	6.36	7.379164	1058.25	11247.64	780	-3524.06	2180	1162.31	365	95	1058.25
41062	8.24	3.12	0	6.12	4.273396	-83.64	9464.929	578	-3566.76	1840	795.12	270	0	-83.64
41063	2.12	3.09	0	1.04	2.087522	-1033.04	8210.238	660	-4782.42	1737	973.38	326	53	-1033.04
41064	2.06	6.3	0	3.12	3.948532	140.47	9278.457	749	-4116.68	1821	1192.15	372	123	140.47
41065	0	4.16	0	1.06	2.146778	3480.01	8244.251	737	-627.32	1774	1120.33	360	116	3480.01
41066	0	0	0	0	0	5356.91	7012	864	1420.18	1766	823.73	375	108	5356.91
41067	0	0	0	0	0	6116.57	7012	1785	1138.3	1591	1110.27	376	116	6116.57
41068	0	0	0	0	0	5268.26	7012	1595	1106.82	1465	683.44	342	7	5268.26
41069	0	0	0	0	0	4768.33	7012	1567	1206.89	1427	348.44	212	7	4768.33
41070	16.1	4.56	10.71	9.9	8.809249	5131.03	12068.51	1421	1157.38	1495	668.65	326	63	5131.03
41071	15.26	10.7	8.64	15.12	12.13138	7795.67	13975.41	2102	1453.59	1966	1525.08	430	319	7795.67
41072	2.24	6.42	0	1.08	3.692272	7129.36	9131.364	1931	1459.39	2070	1078.97	370	220	7129.36
41073	2.2	6.42	0	5.35	4.418659	6017.15	9548.31	1665	1047.54	1808	976.61	365	155	6017.15
41074	0	0	0	0	0	6404.91	7012	1594	1393.18	1986	899.73	365	167	6404.91
41075	2.16	2.08	0	0	1.440096	5067.17								

41089	0	0	0	0	0	5165.21	7012
41090	0	0	0	0	0	3892.66	7012
Totals	9028.98	8265.67	7668.75	8955.17	8460.377	6575475	7422649

* Volumes include interruptible and transportation volumes except for transportation volumes that are not located behind MERC citygates.

** Design Model numbers are used to calculate firm volumes only

1287	1335.11	1299	930.1	286	28	5165.21
456	1454.06	1276	504.6	202	0	3892.66
1131738	1400008	2595112	944741.7	181112	322764	6575475
0.172115	0.212914	0.394665	0.143677	0.027544	0.049086	1

MINNESOTA ENERGY RESOURCES - NMU

Customer Counts by PGAC Class - July 1, 2011 through June 30, 2012

	Tariff	40725	40757	40789	40821	40853	40885	40917	40949	40982	41014	41046	41078
Rate	Rate	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average	Average
Class	Designatio	Customers	Customers	Customers	Customers	Customers	Customers	Customers	Customers	Customers	Customers	Customers	Customers
Residentia	NM001	34409	34177	34128	34343	34967	35388	35557	35621	35643	35684	35627	35442
Residentia	NM002	23	23	22	22	23	24	22	23	24	22	23	22
Commercial	NM050/070	2316	2312	2302	2302	2317	2323	2342	2343	2345	2338	2633	2617
Commercial	NM052/070	3021	2997	3006	3007	3024	3026	3058	3052	3070	3062	2771	2759
Industrial-L	NM150	14	14	14	14	15	12	13	13	13	13	13	13
SV-Joint	NM100/100	0	0	0	0	0	0	0	0	0	0	0	0
SV-Interrupt	NM125	105	102	99	99	99	97	100	97	100	99	92	100
LV-Interrupt	NM200/200	10	10	11	11	10	10	10	10	10	10	10	10
Transport	NM700/710	18	18	18	18	18	18	18	18	18	18	18	18
Transport	NM703/710	11	11	11	10	10	10	10	10	10	10	10	10
Transport	NM716	1	1	1	1	1	1	1	1	1	1	1	1
Transport	NM707/710	3	3	3	3	3	3	3	3	3	3	3	3
Transport	NM72A/730	0	0	0	0	0	0	0	0	0	0	0	0
Transport	NM710	0	0	0	0	0	0	0	0	0	0	0	0
Transport	NM715	0	0	0	0	0	0	0	0	0	0	0	0
Total		39931	39668	39615	39830	40487	40912	41134	41191	41237	41260	41201	40995

MINNESOTA ENERGY RESOURCES - NMU
Projected Fixed Cost - November 2012 through March 2013

Futures Contracts WACOG

NMU

[illegible]

MINNESOTA ENERGY RESOURCES - NMU
Projected Storage Cost - November 2012 through March 2013

Month/ Year	K#118657 NNG Storage	Storage K#123780 LS Power	Storage K#123781 LS Power	Total NNG Storage	WACOG Projected K#118657 NNG WACOG	Projected K#123780 NNG WACOG	Projected K#123781 NNG WACOG	K#118657 NNG Storage Cost	K#123780 NNG Storage Cost	K#123781 NNG Storage Cost	Total NNG Storage Cost	GLGT/VGT Centra AECO Sto	GLGT/VGT Centra AECO Sto	GLGT/VGT Centra AECO Sto
41219	455259	73125	19500	547884	2.8422	2.8422	2.8422	1293937	207835.9	55422.9	1557196	85290	2.1432	182793.5
41250	1143984	183750	49000	1376734	2.8422	2.8422	2.8422	3251431	522254.3	139267.8	3912953	231756	2.1432	496699.5
41282	1143984	183750	49000	1376734	2.8422	2.8422	2.8422	3251431	522254.3	139267.8	3912953	231756	2.1432	496699.5
41314	1143984	183750	49000	1376734	2.8422	2.8422	2.8422	3251431	522254.3	139267.8	3912953	209328	2.1432	448631.8
41343	455259	73125	19500	547884	2.8422	2.8422	2.8422	1293937	207835.9	55422.9	1557196	96379	2.1432	206559.5
Total	4342470	697500	186000	5225970	2.8422	2.8422	79.85619	12342168	1982435	528649.2	14853252	854509	2.1432	1831384

Month/ Year	NNG Storage Volume	NNG Indexes Price	NNG Indexes Cost	AECO Storage Volume	Emerson Indexes Price	Emerson Indexes Cost	Total AECO Sto Volumes	Total AECO Sto WACOG	Total AECO Sto Cost	Total AECO Sto WACOG	Total Emerson Cost
41219	547884	3.6435	1996215	85290	3.776	322055	85290	2.1432	182793.5	3.776	322055
41250	1376734	3.983	5483532	231756	4.088	947418.5	231756	2.1432	496699.5	4.088	947418.5
41282	1376734	4.0745	5609503	231756	4.1895	970941.8	231756	2.1432	496699.5	4.1895	970941.8
41314	1376734	4.07	5603307	209328	4.1825	875514.4	209328	2.1432	448631.8	4.1825	875514.4
41343	547884	3.99	2186057	96379	4.0675	392021.6	96379	2.1432	206559.5	4.0675	392021.6
Total	5225970	3.995165	20878614	854509	4.105224	3507951	854509	2.1432	1831384	4.105224	3507951
Max NNG Storage (Storage plan withdrawals through April 2013)					5225970	5619321	10/31/11 Storage Balance - NNG	5619321	1	5225970	
Max AECO Storage					854509	947820	10/31/11 Storage Balance - AECO	947820			

Month/ Year	K#118657 NNG Storage	Storage K#123780 LS Power	Storage K#123781 LS Power	Total NNG Storage	NNG PNG Volumes	NNG NMU Volumes	NNG Total Volumes	Projected K#118657 NNG WACOG	Projected K#123780 NNG WACOG	Projected K#123781 NNG WACOG	WACOG NNG Cost	WACOG NNG Cost	WACOG NNG Cost	WACOG NNG Cost	WACOG NNG Cost	WACOG NNG Cost	WACOG NNG Cost	WACOG NNG Cost	WACOG NNG Cost
41219	455259	73125	19500	547884	487213.2	60670.82	547884	2.8422	2.8422	2.8422	1384757	172438.6	1557196	3.6435	1775161	221054.1	1996215		
41250	1143984	183750	49000	1376734	1224279	152454.9	1376734	2.8422	2.8422	2.8422	3479646	433307.2	3912953	3.983	4876304	607227.7	5483532		
41282	1143984	183750	49000	1376734	1224279	152454.9	1376734	2.8422	2.8422	2.8422	3479646	433307.2	3912953	4.0745	4988325	621177.4	5609503		
41314	1143984	183750	49000	1376734	1224279	152454.9	1376734	2.8422	2.8422	2.8422	3479646	433307.2	3912953	4.07	4982816	620491.3	5603307		
41343	455259	73125	19500	547884	487213.2	60670.82	547884	2.8422	2.8422	2.8422	1384757	172438.6	1557196	3.99	1943981	242076.6	2186057		
Total	4342470	697500	186000	5225970	4647264	578706.3	5225970	2.8422	2.8422	2.8422	13208453	1644799	14853252	3.995165	18566587	2312027	20878614		

Month/ Year	AECO Storage	GLGT PNG Volumes	GLGT NMU Volumes	VGT PNG Volumes	VGT NMU Volumes	Centra NMU Volumes	Total AECO Sto Volumes	Projected Emerson Index Price	GLGT PNG Cost	GLGT NMU Cost	VGT PNG Cost	VGT NMU Cost	Centra NMU Cost	Total AECO Storage Cost
41219	85290	12351.49	24049.04	12434.87	19722.89	16745.71	85304	2.1432	26471.72	51541.9	26650.42	42270.09	35889.41	182823.5
41250	231756	33192.83	64628.27	33416.9	53002.37	45001.64	229242	2.1432	71138.87	138511.3	71619.09	113594.7	96447.52	491311.5
41282	231756	33192.83	64628.27	33416.9	53002.37	45001.64	229242	2.1432	71138.87	138511.3	71619.09	113594.7	96447.52	491311.5
41314	209328	31051.33	60458.65	31260.94	49582.81	42098.27	214452	2.1432	66549.2	129575	66998.45	106265.9	90225.02	459613.5
41343	96379	13950.16	27161.74	14044.33	22275.64	18913.13	96345	2.1432	29897.99	58213.03	30099.81	47741.16	40534.61	206486.6
Total	854509	123738.6	240926	124573.9	197586.1	167760.4	854585	2.143391	265196.6	516352.5	266986.9	423466.5	359544.1	1831547

Month/ Year	AECO Storage	GLGT PNG Volumes	GLGT NMU Volumes	VGT PNG Volumes	VGT NMU Volumes	Centra NMU Volumes	Total AECO Storage Volumes	Projected Emerson Index Price	GLGT PNG Cost	GLGT NMU Cost	VGT PNG Cost	VGT NMU Cost	Centra NMU Cost	Total AECO Storage Cost
41219	85290	12351.49	24049.04	12434.87	19722.89	16745.71	85304	3.776	46639.24	90809.17	46954.08	74473.62	63231.8	322107.9
41250	231756	33192.83	64628.27	33416.9	53002.37	45001.64	229242	4.088	135692.3	264200.4	136608.3	216673.7	183966.7	937141.3
41282	231756	33192.83	64628.27	33416.9	53002.37	45001.64	229242	4.1895	139061.3	270760.1	140000.1	222053.4	188534.4	960409.4
41314	209328	31051.33	60458.65	31260.94	49582.81	42098.27	214452	4.1825	129872.2	252868.3	130748.9	207380.1	176076	896945.5
41343	96379	13950.16	27161.74	14044.33	22275.64	18913.13	96345	4.0675	56742.28	110480.4	57125.32	90606.18	76929.15	391883.3
Total	854509	123738.6	240926	124573.9	197586.1	167760.4	854585	4.105852	508007.3	989118.3	511436.7	811187	688738.1	3508487

