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December 30, 2015

Ms. Mary Jo Kunkle
Executive Secretary
Michigan Public Service Commission
7109 W. Saginaw Hwy.
Lansing, MI 48917

Re: Michigan Gas Utilities Corporation
2016-17 GCR Plan and Factors
MPSC Case No. U-17940

Dear Ms. Kunkle:

Enclosed for electronic filing are the following:

(i) Michigan Gas Utilities Corporation's Application;
(ii) Direct Testimony and Exhibits of Sarah R. Mead;
(iii) Direct Testimony and Exhibits of Kevin R. Kuse;
(iv) Direct Testimony of Nicholas J. Krzeminski;
(v) Direct Testimony and Exhibits of John P. Wirick, Jr.;
(vi) Direct Testimony, Exhibits and Workpapers of David J. Tyler; and
(vii) Appearances of Sherri A. Wellman, Paul M. Collins and Theresa A.G. Staley.

Finally, a marked-up Notice of Hearing has been electronically sent to Gloria Jones.

If you should have any questions, please kindly advise.

Very truly yours,

Paul M. Collins

Digitally signed by: Paul M. Collins
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Date: 2015.12.30 10:52:04 -04'00'

Paul M. Collins

Enclosures
cc: David J. Tyler
Sarah R. Mead
Koby Bailey
PMC/cla
25693145.1\131120-00066

S T A T E O F M I C H I G A N

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

*** * * * ***

In the matter of the application of **MICHIGAN GAS UTILITIES CORPORATION** for authority to implement a gas cost recovery plan and factors for the 12-month period from April 2016 through March 2017, and for related approvals.	))))))	Case No. U-17940

APPLICATION

Michigan Gas Utilities Corporation ("MGUC" or the "Company"), a Delaware corporation authorized to do business in Michigan, hereby applies for approval of a Gas Cost Recovery ("GCR") plan and factors for the 12-month period from April 2016 through March 2017. The Company respectfully represents to the Michigan Public Service Commission ("MPSC" or the "Commission") as follows:

1. MGUC, with its principal office located at 899 South Telegraph Road, Monroe, Michigan, is engaged as a public utility in the business of supplying and distributing natural gas to the public in its various service areas located in the southern and western portions of Michigan's Lower Peninsula.

2. MGUC's retail natural gas sales business and its retail gas transportation business are subject to the jurisdiction of the Commission.

3. Pursuant to 1982 PA 304 ("Act 304"), the Commission, in its Opinion and Order dated August 30, 1983, in Case No. U-7483, authorized MGUC's predecessor-in-interest to incorporate a GCR Clause in its rate schedules.

4. Section 6h(3) of Act 304 requires that a utility file a complete GCR plan in order to implement its GCR Clause. Section 6h(4) of Act 304 also requires a utility to file a five-year forecast with that GCR plan.

5. MGUC requests authority to implement a uniform GCR factor of $3.3249 per thousand cubic feet ("Mcf") for the billing months of April 2016 through March 2017

6. The GCR factor of $3.3249 per Mcf is comprised of a commodity charge of $2.6946 per Mcf and a Reservation Charge of $0.6303 per Mcf.

7. Consistent with the authority granted in Case Nos. U-16481 et al., MGUC will assess a Reservation Charge of $0.6303 per Mcf to both GCR and Gas Customer Choice ("GCC") customers for the billing months of April 2016 through March 2017.

8. MGUC also seeks to implement a Contingency Matrix which, as described in the Company's testimony and exhibits, will be used to adjust the GCR factor should circumstances warrant.

9. The testimony and exhibits constituting MGUC's 2016-2017 GCR Plan include (i) a description of all of MGUC's major contracts and gas supply arrangements, (ii) a description of the expected GCR and GCC load factors, (iii) support for the derivation of the GCR factor and the Reservation Charge, (iv) a description of the expected costs and sources of supply, and (v) a description of the proposed Contingency Matrix. Also included in the testimony is an evaluation of the reasonableness and prudence of MGUC's decisions to obtain gas in the manner described in the GCR plan in light of the major alternative gas supplies available to MGUC to minimize its costs of gas. The forecasting requirements of MCL 460.6h(7) are also addressed in the testimony and exhibits.

10. Additionally, MGUC requests authority to treat as part of its booked cost of gas for purposes of the GCR, reasonably and prudently incurred premiums on financial hedging instruments.

WHEREFORE, Michigan Gas Utilities Corporation prays that the Commission:

A. Make and issue its notice of hearing, and after such notice and hearing;

B. Authorize Michigan Gas Utilities Corporation to implement a 12-month GCR plan for the period from April 1, 2016, through March 31, 2017, as proposed in this Application;

C. Determine that the decisions underlying the plans are reasonable and prudent;

D. Authorize Michigan Gas Utilities Corporation to implement the GCR factor of $3.3249 per Mcf and Contingency Matrix for the period from April 1, 2016 through March 31, 2017 as proposed in this Application and supporting testimony and exhibits;

E. Authorize Michigan Gas Utilities Corporation to implement a Reservation Charge of $0.6303 per Mcf to both GCR and GCC customers;

F. Determine that the decisions underlying the five-year forecast are reasonable and prudent, and indicate any cost items in the five-year forecast that, on the basis of present evidence, this Commission would be unlikely to permit Michigan Gas Utilities Corporation to recover from its customers in rates, rate schedules, or gas cost recovery factors established in the future;

G. Authorize Michigan Gas Utilities Corporation to treat, as part of its booked cost of gas for purposes of the GCR, reasonably and prudently incurred premiums on financial instruments; and

H. Grant Michigan Gas Utilities Corporation such further relief as may be lawful and proper.

Respectfully submitted,

MICHIGAN GAS UTILITIES CORPORATION

Paul M. Collins

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Date: 2015.12.30 10:52:23 -04'00'

Dated: December 30, 2015 By: _____

One of its Attorneys
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19,649,062.1\131120-00037

MICHIGAN GAS UTILITIES CORPORATION
Case No. U-17940

2016/2017 GAS COST RECOVERY PLAN AND FIVE YEAR FORECAST
INDEX OF EXHIBITS

Exhibit No.	Page No.(s)	Description	Witness	Workpaper(s)
A-1 (SRM-1)	1	System Map – Service Areas and Pipeline / Storage Accessibility	S. Mead	None
A-2 (SRM-2)	1	Schematic of Supply Options	S. Mead	None
A-3 (SRM-3)	1	Summary of Gas Supply, Transportation and Storage Contracts	S. Mead	None
	2	Interstate Pipeline Contracts and Other Assets Summary	S. Mead	None
A-4 (SRM-4)	1	Peak Day Supply Analysis	S. Mead	None
A-5 (SRM-5)	1	Forecasted Future Prices	S. Mead	None
	2	Historical Basis Differential and Forecasted Basis	S. Mead	None
	3	Historical Btu Data	S. Mead	None
A-6 (SRM-6)	1	Total GCR Supply by Source for the 12-Month Periods (2016/2017 through 2020/2021)	S. Mead	None
A-7 (SRM-7)	1 thru 22	GCR Supply Allocation	S. Mead	None
A-8 (KRK-1)	1 thru 2	GCR & GCC Customer Normal Load	K. Kuse	None
A-9 (KRK-2)	1 thru 3	GCR & GCC Customer Counts	K. Kuse	None
A-10 (KRK-3)	1 thru 3	Five Year Forecast Of the Normal Load Requirements for GCR and GCC customers	K. Kuse	None
A-11 (JPW-1)	1 thru 11	Peak Day Analysis	J. Wirick	None
A-12 (JPW-2)	1 thru 3	Status Update on Hedging	J. Wirick	None
A-13 (JPW-3)	1 thru 2	2016-2017 Proposed Hedge Strategy	J. Wirick	None

MICHIGAN GAS UTILITIES CORPORATION
Case No. U-17940

2016/2017 GAS COST RECOVERY PLAN AND FIVE YEAR FORECAST
INDEX OF EXHIBITS

Exhibit No.	Page No.(s)	Description	Witness	Workpaper(s)
A-14 (DJT-1)	1	Annual Base Gas Cost Recovery ("GCR") Factors and Reservation Charge for the 12-Month Period Ending March 31, 2017	D. Tyler	None
	2	Reservation Charge Tariff Sheet	D. Tyler	None
A-15 (DJT-2)	1 thru 6	Forecasted Load Statistics for the 12-Month Periods 2016/2017 through 2020/2021	D. Tyler	WP A-15-1
	7 thru 9	2016/2017 Transportation Volume Forecast and Transportation Service Contracts	D. Tyler	None
A-16 (DJT-3)	1	Calculation of the GCR Over/(Under)-Recovery Projected Balance for 2015/2016	D. Tyler	None
	2	Calculation of the Reservation Charge Over/(Under)-Recovery Projected Balance for 2016/2016	D. Tyler	None
A-17 (DJT-4)	1	Billed Volumes in MMcf @ 14.65 psia dry for the GCR Plan Period Ending March 31, 2017	D. Tyler	WP A-17-1
	2	Derivation of the Base GCR Factor and Reservation Charger for the GCR Plan Period Ending March 31, 2017	D. Tyler	None
	3	Computation of Revenue Collected through application of the Base GCR Factor and Reservation Charge for the Plan Period Ending March 31, 2017	D. Tyler	None
	4	Calculation of the Annual Base GCR factor, Reservation Charge and Gas Commodity Cost per Mcf	D. Tyler	None
A-18 (DJT-5)	1 thru 6	Transportation, No-Notice, and Storage Service Options	D. Tyler	None
A-19 (DJT-6)	1 thru 2	Legal and Regulatory Actions Taken at the Federal Level To Minimize the Cost of Purchased Gas	D. Tyler	None
A-20 (DJT-7)	1	Contingency Matrix	D. Tyler	None

S T A T E O F M I C H I G A N
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

*** * * ***

In the matter of the application of	)	
MICHIGAN GAS UTILITIES CORPORATION	)	**Case No. U-17940**
to implement a gas cost recovery plan and factors	)	
for the 12-month period from April 2016 through	)	
March 2017, and for related approvals.	)	

DIRECT TESTIMONY AND EXHIBITS OF

SARAH R. MEAD

On Behalf of

Michigan Gas Utilities Corporation

December 30, 2015

DIRECT TESTIMONY

SECTION I – BACKGROUND

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Sarah R. Mead. My business address is WEC Energy Group, Inc., 700 North Adams Street, P.O. Box 19001, Green Bay, WI 54307-9001. My position at Michigan Gas Utilities Corporation ("MGUC" or the "Company") is Manager – Gas Supply.

Q. WHAT ARE YOUR PRIMARY DUTIES AND RESPONSIBILITIES AS MANAGER – GAS SUPPLY FOR MGUC?

A. As Manager-Gas Supply I am responsible for the daily operational oversight and balancing of MGUC's distribution system. I am also responsible for the following: (i) developing gas supply and storage capacity strategies to provide reliable and cost-effective natural gas service; (ii) developing and implementing short- and long-term gas supply and capacity release strategies including gas purchase and hedging strategies; (iii) administering gas supply, transportation and storage contracts in accordance with prescribed legal policies, procedures, and approved plans; and (iv) acquiring daily, monthly, and annual supplies to meet system requirements. Additionally, I review and approve invoices for supply, storage, and transportation costs as incurred.

Q. PLEASE SUMMARIZE YOUR EDUCATION, EMPLOYMENT AND PROFESSIONAL EXPERIENCE.

A. I hold a Bachelor's Degree from the University of Wisconsin Milwaukee in Business Administration, with a minor in Communication. I hold a Master of Business Administration in Finance through Lakeland College, Sheboygan, Wisconsin. My employment started with Integrys Energy Group (now WEC Energy Group ("WEC")) in the non-regulated marketing divisionwhere I worked as the Senior Sales Forecaster from May 2000 to October 2009. In this position, I forecasted natural gas and electric needs on an hourly, daily, monthly, seasonal, and yearly basis for Wisconsin, Michigan, Illinois, Minnesota, Ohio, limited areas in New England, and Alberta, Canada. In October 2009, I moved to the regulated division as a Senior Sales and Revenue Forecaster. In September 2011, I was promoted to the Manager – Gas Supply for MGUC (a subsidiary of WEC).

Q. HAVE YOU PREVIOUSLY TESTIFIED IN ANY REGULATORY PROCEEDINGS?

A. Yes, I have testified before the Wisconsin Public Service Commission on behalf of WPS Energy Services, Inc. in Case No. 05-UR-102 and on behalf of Integrys Energy Services, Inc. in Case Nos. 6690-GR-101 and 6690-UR-119. I was Integrys Energy Services, Inc.'s representative and an active member in the Retail Energy Supply Association until October 2009, and actively participated in Case No. U-15953 before the Michigan Public Service Commission ("MPSC" or "Commission"). I submitted rebuttal testimony in MPSC Case Nos. U-16481 and U-16513 on behalf of MGUC in June 2011. I have

submitted direct and rebuttal testimony and responded to data requests in MPSC Case Nos. U-16481-R, U-16920, U-16920-R, U-17130, U-17130-R, U-17331, U-17331-R and U-17690.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY AND EXHIBITS?

A. The purpose of my testimony and exhibits is to present MGUC's 2016-2017 plan for meeting the demand of the Company's Gas Cost Recovery ("GCR") customers under all conditions, and meeting the demand of the Company's Gas Customer Choice ("GCC") customers under peak day conditions. I will describe the supply assets, storage plan and supply purchase strategy that MGUC will use for meeting those demands. I will also describe some of the unique characteristics of MGUC's service territory and discuss some of the operational concerns these create for the Company. Finally, I will describe and support the projected cost of gas for the five year period, 2016-2021.

My direct testimony is organized as follows:

I. Background
II. Description of Service Territory and Supply System Assets
    A. Service Territory
    B. Supply System Assets
III. Supply Plan: Storage Management, Peak Day and Supply Purchase Strategy
    A. Storage Management Plan
    B. Peak Day Plan
    C. Supply Purchase Strategy
IV. Total Cost of Gas
    A. Fixed Cost
    B. Commodity Cost
    C. Alternative Fuels Comparison
V. Five-Year Forecast

Q. PLEASE IDENTIFY THE EXHIBITS YOU ARE SPONSORING IN THIS PROCEEDING.

A. I am sponsoring the following exhibits, all of which were prepared by me or under my direction and supervision:

Exhibit	Content	
A-1 (SRM-1)	System Map - Service Areas and Pipeline/Storage Accessibility	
A-2 (SRM-2)	Schematic of Supply Options	
A-3 (SRM-3)	Page 1:	Summary of Gas Supply, Transportation and Storage Contracts
	Page 2:	Contracts and Other Assets Summary
A-4 (SRM-4)	Peak Day Supply Analysis	
A-5 (SRM-5)	Page 1:	Forecasted Futures Prices
	Page 2:	Historical Basis Differential and Forecasted Basis
	Page 3:	Historical Btu Data
A-6 (SRM-6)	Total GCR Supply by Source for 12- Month Periods (2016-2017 through 2020-2021)	
A-7 (SRM-7)	Pages 1 through 22:	GCR Supply Allocation (2016-2017 through 2020-2021)

SECTION II – DESCRIPTION OF SERVICE TERRITORY AND SUPPLY SYSTEM ASSETS

Service Territory

Q. PLEASE DESCRIBE THE COMPANY'S SERVICE TERRITORY AND OPERATING SYSTEM.

A. MGUC serves approximately 169,000 southern and western Michigan customers in 148 communities. The Company's system is made up of twelve geographic sub-areas served by varying but not necessarily overlapping combinations of interstate, intrastate, storage and local production supplies. The names of these "sub-areas" roughly correspond to the cities, villages, and townships in which they are located. Natural gas property includes approximately 3,400 miles of distribution main, 440 miles of transmission main, 33 gate stations and 166,000 lateral services. MGUC owns and operates a storage field, which can hold approximately 2.9 Bcf of natural gas. Exhibit A-1 (SRM-1) is a map of the Company's system that delineates those sub-areas and identifies the pipeline/storage facilities that can bring supply to each sub-area. As the map illustrates, the twelve areas can be organized into three non-contiguous geographic regions.

Supply System Assets

Q. PLEASE DESCRIBE THE SUPPLY SYSTEM ASSETS THAT THE COMPANY USES TO PROVIDE NATURAL GAS TO GCR CUSTOMERS, AND TO PROVIDE SUPPLIER OF LAST RESORT SERVICE TO GCC CUSTOMERS.

A. As shown in Exhibit A-1, MGUC's twelve geographic sub-areas are typically organized into three groups, the Western Area (Group 1), the Coldwater Area (Group 2), and the Monroe Area (Group 3). The Company obtains its natural gas supply through transportation from ANR Pipeline Company ("ANR"), Panhandle Eastern Pipe Line Company ("PEPL"), MichCon ("DTE"), and Consumers Energy Company ("Consumers"

or “CP”). The Company also purchases natural gas directly from producers and broker/marketers in the service territory who utilize interstate and intrastate supply sources. Finally, MGUC owns and operates three underground gas storage reservoirs located in Calhoun County, Michigan (identified as “MGUC” in Exhibit A-1). Exhibit A-2 (SRM-2) provides a schematic view of the various services for the twelve geographic sub-areas. This exhibit depicts the various sources of supply with arrows indicating the service territory or “citygate” which they serve. For example, arrows connect ANR storage with boxes entitled “Group 1,” “Group 2,” and “Group 3”. This illustrates that supply from ANR storage can be delivered to every sub-area within each of MGUC's three groups. By contrast, Consumers only has arrows connected to boxes entitled “Gun Plain” and “Coldwater.” This means that Consumers can only deliver supply to the Gun Plain citygate, which serves the North and South Otsego sub-areas, and the Coldwater sub-area.

Q. ARE THE SAME SUPPLY SYSTEM ASSETS USED FOR EACH OF THE THREE GROUPS WITHIN MGUC’S SERVICE TERRITORY?

A. No. As illustrated by Exhibit A-1 and Exhibit A-2, each group is unique in its supply mix due to the location of the various pipelines in MGUC’s territory.

Q. PLEASE DESCRIBE THE COMPANY’S PIPELINE TRANSPORTATION ASSETS.

A. The Company has firm transportation contracts with ANR, DTE, and PEPL. None of MGUC’s transportation contracts will expire during the 2016-2017 GCR period. The

ANR contracts, however, will expire at the end of the 2016-2017 GCR period. Exhibit A-3 (SRM-3) details the assets.

Q. PLEASE DESCRIBE THE DIFFERENT TYPES OF FIRM TRANSPORTATION SERVICES AND STORAGE SERVICES UTILIZED BY MGUC.

A. Transportation services used by MGUC include:

ANR Enhanced Transportation Service ("ETS") – Firm transportation capacity with daily and intra-day nomination rights. This service is used to transport supply to each of the twelve sub-areas in quantities up to the contractual limits.

PEPL Enhanced Firm Transportation ("FT") - Firm transportation with daily and intra-day nomination rights. PEPL serves and connects the Coldwater and Monroe service areas.

Storage services utilized by MGUC include:

ANR FSS – Firm storage capacity within ANR's storage fields with daily and intra-day nomination rights. This service is used for seasonal supply balancing, and also short term back-up and balancing purposes, due to the intra-day nominations rights. This service is also a required component of the No Notice Service ("NNS").

ANR NNS – Firm storage agreement on ANR Pipeline with daily injection/withdrawal rights at the primary delivery point. The difference between the sum of the nominations and the allocated quantities at a delivery point is deemed the no-notice quantity and

allocated as an injection or withdrawal from the designated storage account. This service is used for daily balancing purposes, as it enables MGUC to meet un-forecasted and un-nominated changes.

Additional details and information, as well as information concerning other available services, is included in Mr. Tyler's Exhibit A-18 (DJT-5).

Q. HAS THE COMPANY SECURED ADDITIONAL ASSETS IN THE LAST TWELVE MONTHS?

A. Yes, the Company secured multiple additional assets. First, MGUC secured winter-only firm transportation capacity from DTE for 5,000 Dth per day starting November 2015 (Contract #4078-03). This contract is listed on Exhibit A-3 (SRM-3), page 1 of 2, line 10. Second, MGUC secured an additional 5,000 Dth per day annual firm transportation capacity originating in the ANR Chicago Hub area (Contract #126356). This transportation will be utilized mostly to fill storage in the summer and to deliver firm gas supply to the Western Area in the winter. The ANR Chicago contract is listed on Exhibit A-3 (SRM-3), page 1 of 2, line 9. Finally, MGUC secured firm ANR FSS Storage that has a withdrawal rate Maximum Daily Quantity "MDQ" of 15,000 Dth per day (Contract # 126354). The ANR FSS Storage contract is listed on Exhibit A-3 (SRM-3), page 1 of 2, line 13. Finally, with the ANR FSS Storage, MGUC needed to secure takeaway ML7 capacity to move gas after it was withdrawn from the storage field to MGUC's gates (Contract #126355). The ANR ML7 contracted is listed on Exhibit A-3 (SRM-3), page 2

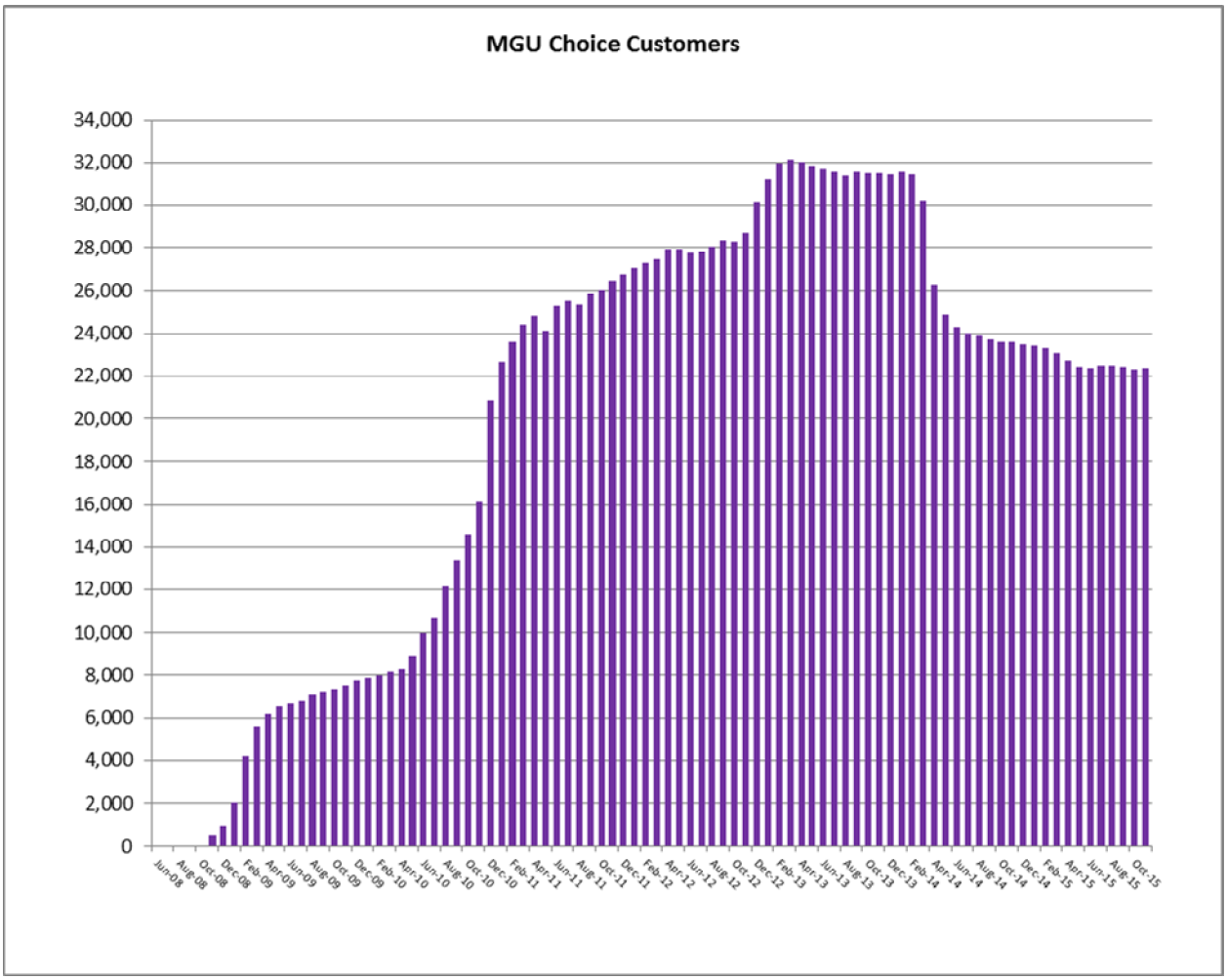
of 2, line 18.

Q. WHY HAS THE COMPANY SECURED ADDITIONAL ASSETS?

A. MGUC is required to satisfy GCR customer and GCC peak day volumes, and seasonal GCR customer volumes, as part of its storage, transportation, and supply portfolio. The peak day analysis includes both GCR and GCC volumes, so customer movement between (to and from) GCR service and GCC service has no effect on the peak day forecast. GCC customers have recently been choosing to return to GCR service and, as a result, the GCR seasonal and annual volumes have been increasing. Due to this change, MGUC has investigated whether the location and impact of the increased seasonal and annual GCR load signals the need for additional portfolio assets and whether those additional portfolio assets should take the form of storage assets, transportation assets, or a mixture of both. In making that judgment, MGUC used Load Duration Curve Analysis (LDCA) to determine the adequacy of the existing asset portfolio to serve the GCR seasonal and annual load. To provide useful context, each area was analyzed based on historical daily total throughput, historical daily GCR/GCC load, and forecast GCR-only load. The daily load was then stressed to 110% of normal, based on MGUC's traditional definition of a "cold" winter. The supply portfolio available to each area was superimposed on the load duration curve to provide a visual representation of the capabilities of the existing firm storage and firm transportation (FT) portfolios. Storage and FT asset portfolios were then adjusted to adequately serve the forecast GCR load

Q. HOW MANY CUSTOMERS WERE CLASSIFIED AS GCC IN NOVEMBER 2013 COMPARED TO NOVEMBER 2015?

A. The GCC customer count in November 2013 was 31,484. The GCC customer count in November 2015 was 22,364 for a reduction of GCC customers by 9,120.



Q. WHAT WAS THE RESULT OF MGUC'S INVESTIGATION AND ANALYSIS?

A. MGU's Coldwater and Monroe area asset portfolio appears capable of handling its forecast GCR design seasonal and annual load. The increases in forecast GCR seasonal and annual design load in the Western Area/Group 1, however, have exceeded the

capabilities of MGU's current Western Area/Group 1 asset portfolio to serve them. MGU's analysis determined that the Western Area/Group 1 asset portfolio should be adjusted as follows:

1. Adding 5,000 dth/day of winter Firm Transport Capacity;
2. Adding 15,000 dth/day of storage with a capacity of 750,000 dth; and
3. Adding 4,000 dth/day of summer Firm Transport Capacity (primarily for refilling storage).

Q. DID THE COMPANY SOLICIT BIDS FOR THE ADDITIONAL ASSETS?

A. Yes, MGUC sent a request for proposal ("RFP") in May 2015. The RFP invited entities to submit proposals to sell firm pipeline transportation capacity, firm storage with related firm transportation, and firm "summer-pricing/winter supply" delivered (also called synthetic storage) to MGUC at one or all of the following locations:

- MGU – Western Area/Group1 (Meter#139250) off of ANR Pipeline Company ("ANR")
- Benton Harbor (Meter#11578) off of ANR
- MGU citygate off of MichCon/DTE at North Grand Haven

Q. PLEASE EXPAIN WHY THE COMPANY CONTRACTS FOR FIRM TRANSPORT FROM THE PIPELINES.

A. Each of the interstate pipelines serving the Company's service territory has much of its firm transportation capacity sold and allocated to the various shippers for multiple years. During severe colder-than-normal weather, such as the Company's peak-day conditions, consumption increases dramatically and it is likely that contracted firm transportation capacity will be fully utilized. Unlike firm transportation, released capacity or interruptible capacity is typically subject to recall under such conditions, so any supplier relying on interruptible or released capacity would likely be unable to deliver its supply to the Company's service territory. The Company secures firm transportation capacity to provide a portion of the supply for both GCR and GCC customers under peak-day conditions to assure reliable transportation of supply, rather than relying on interruptible or released capacity, which may be potentially cheaper but which also carries the risk of being unavailable when it is most needed.

Q. PLEASE DESCRIBE THE ANR DEFERRED DELIVERY SERVICE.

A. The ANR Deferred Delivery Service ("DDS") is an interruptible storage agreement on ANR Pipeline with daily and intra-day injection/withdrawal options if available. MGUC utilizes this service, when available, to balance the system in conjunction with its other firm services.

Q. PLEASE DESCRIBE THE COMPANY'S OWNED UNDERGROUND STORAGE FACILITIES.

A. MGUC owns, operates and maintains three main storage reservoirs: Partello/Anderson, Cortright, and Lee 3. These fields, which are located near Marshall in Calhoun County, Michigan, can be further divided into several smaller pools or reservoirs. The Company also maintains two compressors with 1,835 combined horsepower and two dehydrators. Peak storage withdrawal from all three fields is about 30,000 Mcf/day with total storage capacity of 2.9 Bcf. Partello/Anderson was drilled in 1959 and converted to storage operation in 1971 at a depth of 3,250 feet. Cortwright was drilled in 1972 and converted to storage in 1976 at a depth of 3,250 feet. Lee 3 was drilled in 1972 and converted to storage operation in 1992 at a depth of 3,300 feet. MGUC's storage serves the Coldwater district. Exhibit A-3 (SRM-3) details additional leased storage service options that are also utilized by MGUC.

Q. PLEASE DESCRIBE THE COMPANY'S LEASED STORAGE SERVICE ASSETS.

A. The Company's leased storage service assets are used primarily for system balancing, daily supply, and to cover peak day demand for GCR and GCC customers. MGUC holds two contracts with ANR: (1) Contract No. 110023 with an annual maximum storage quantity of 3,159,950 Dth that includes 63,199 Dth/day withdrawal and 18,057 Dth/day injection capability; and (2) Contract No. 126354 with an annual maximum storage quantity of 758,550 Dth that includes 15,171 Dth/day withdrawal and 4,335 Dth/day injection capability. ANR storage is accessible to all areas of the MGUC service territory

and is a necessity in balancing the system. Because MGUC contracts with ANR for storage services, it is able to also contract for ANR NNS service (No Notice Service). This service is particularly useful and necessary to balance the system at the end of the gas day after the deadlines for making nominations to firm storage assets. The storage assets, in conjunction with ANR NNS service, are imperative to maintain system integrity and to respond to weather pattern changes and customer consumption fluctuations. Exhibit A-3 depicts the details of the leased storage contracts.

Q. ARE THERE ANY MAJOR MAINTENANCE OR CONSTRUCTION PROJECTS INCLUDED IN THE 2015-2016 GCR PLAN THAT WOULD AFFECT GAS SUPPLY?

A. Not at this time, however there are some projects that are planned that are not expected to affect gas supply. MGUC is planning to rebuild East Grand Haven (Grand Haven -ANR) station and Guardian Glass Station (Monroe - PEPL) in 2016. MGUC does not believe that either of these projects will require the station to be shut in. Rebuilding includes new telemetry, RTU and communications, a new back up electrical generator and transfer switch, a new odorization unit, new regulation, and a new DEMAX screen for gas control.

At MGUC indigenous storage, MGUC plans to install a large filter to be used while gas is free flowing out of storage.

MGUC is also planning to replace the 310 psig pipe from station 2 in Coldwater to Station 1 in Coldwater in order to increase the pressure to 720 psig on this section.

Q. DO THE SUPPLY SYSTEM ASSETS IN THE 2016-2017 GCR PLAN INCLUDE ANY ADDITIONAL ASSETS/SERVICES NOT PREVIOUSLY DISCUSSED?

A. Yes. The Company will continue to rely on ANR NNS for balancing the system. In addition, MGUC will utilize term packages, call/swing packages, and asset management agreements ("AMA") as it has in past plans. Term packages of gas have a consistent volume for a specific time frame at a given price. Call/swing packages give MGUC the right to call upon a source of supply for a given time frame at a contract determined price. MGUC uses AMA's to maximize the value of certain transportation assets by releasing the capacity to an asset manager in exchange for compensation, baseload volumes and/or a right to call upon supply under certain conditions (similar to a call/swing package). Each AMA is unique and the services provided and compensated for vary based on needs.

MGUC sends out a Request for Proposal ("RFP") which begins with a determination of the supply requirement for the period being requested. Once bids are received, they are analyzed first by looking at conformity and reliability and then price. The Company's index price purchases are made on a monthly basis through the RFP process. The purchasing is done throughout the Plan year. The purchased volume is determined by the GCR Plan and adjusted for the current storage position relative to Plan storage levels.

The Company may make multi-month purchases if a base level requirement for the winter period can be determined.

Q. WHAT SHALE PLAYS CAN MGUC UTILIZE WITH THE ANR SE CAPACITY?

A. During the renewal of the ANR SE Capacity in 2013, MGUC successfully negotiated the inclusion of all ANR ML2 points and the Rex Shelbyville point. Many of these points can access supply from shale plays which include Haynesville – Bossier, Woodford, Barnett, Fayetteville, Niobrara, and Marcellus.

Q. HAS MGUC CONTRACTED WITH ANY COUNTERPARTIES THAT SELL IN THESE AREAS OR OTHER AREAS?

A. Yes, in addition to North American Energy Standards Board base contracts ("NAESB agreements") already in place with counterparties, MGUC has signed NAESB agreements with fifteen additional counterparties since December 1, 2013. The additional counterparties broaden the pool of potential bidders for any Company RFP.

Q. WHAT HAS BEEN AND WILL BE MGUC'S GOAL AS IT NEGOTIATES NEW TRANSPORTATION, STORAGE, AND/OR SUPPLY CONTRACTS TO REPLACE EXPIRING CONTRACTS?

A. First, MGUC will look to meet its customers' requirements in the most reliable, cost effective manner possible. MGUC has attempted to cover system requirements in a cost effective fashion, while at the same time maintaining supply basin diversity. Second, MGUC will evaluate new contractual arrangements and physical facilities that could

improve the operation of the distribution system and the functionality of existing agreements on an ongoing basis.

Q. ARE THERE ANY OPERATIONAL CONCERNS THAT AFFECT THE COMPANY'S STRATEGY WHEN PURCHASING SUPPLY OR ACQUIRING SUPPLY SYSTEM ASSETS?

A. Yes. Operational concerns that affect purchasing strategy include: (1) sub-areas that are isolated and, therefore, must utilize specific pipelines/storage fields; (2) sub-areas with a larger-than-normal percentage of choice/transportation volumes; (3) sub-areas with operational pressure concerns; (4) the status of the MGUC storage field; (5) limitations of MGUC storage; (6) Peak vs. Average Load Differential; (7) increasing reliance on swing/call packages to meet peak day requirements; (8) operational need to flow gas through certain stations to ensure reliability; and (9) movement of customers to and from GCR/GCC services.

SECTION III – SUPPLY PLAN: STORAGE MANAGEMENT, PEAK DAY AND SUPPLY PURCHASE STRATEGY FOR THE 2016-2017 PERIOD

STORAGE MANAGEMENT PLAN

Q. DESCRIBE THE FUNCTIONS PERFORMED BY THE COMPANY'S STORAGE ASSETS.

A. MGUC utilizes its storage assets to provide natural gas deliverability during periods of

high demand and for operational flexibility in balancing MGUC's system year round. The natural gas transmission infrastructure in the United States was originally constructed to deliver natural gas via "long haul" transmission pipelines from the producing regions of the country (i.e., Gulf Coast, Mid-Continent, Rockies) to the consuming (market) regions (i.e. Midwest, Northeast, etc.). However, there is not enough "long haul" pipeline capacity available to meet high demands during periods of cold weather or increased demand. MGUC, therefore, transports natural gas and injects it into storage fields closer to the market areas during April through October when gas demand is typically lower. MGUC withdraws the natural gas from storage and delivers it to the market area via "short haul" pipelines during November through March when demand is typically much higher.

In addition, MGUC uses its gas storage assets to help balance the MGUC system every day of the year. Each day, MGUC is obligated to deliver gas brought to MGUC's system by Transportation customers and GCC customers, in addition to the gas MGUC brings to the system for its GCR customers. MGUC forecasts the total gas load for each of the three major geographic areas its serves and nominates the appropriate volume of gas to meet the system requirements. In doing so, it accounts for any changes in the forecasted load that day and for any changes in volumes that Transportation and/or GCC customers bring to the system. This is done so that any gas supply shortages or surpluses within each geographic area are minimized and the Company remains within the balancing tolerance of each pipeline. At the same time, MGUC's system pressures are managed within designed operating parameters to provide safe, reliable gas service to the customer

at a reasonable cost and gas storage plays an integral role in managing these loads and pressures.

Q. WHAT PERCENTAGE OF THE TOTAL WINTER DEMAND WILL BE SUPPLIED FROM STORAGE DURING THE 2015-2016 PERIOD?

A. A combination of the two will be used to fill storage to a level of about one-third of annual sales. During the winter period (November 2016 through March 2017), approximately 43% of the gas provided to the Company's GCR customers is planned to come from MGUC's storage assets.

Q. HOW DOES MGUC PLAN TO UTILIZE ITS STORAGE INVENTORY DURING THE WINTER SEASON?

A. MGUC has selected the following inventory target levels in order to assure deliverability throughout the 2016-2017 winter months (under normal weather conditions). MGUC will adjust its purchases based on these inventory targets. The targets are as follows:

	ANR 3.4 BCF	MGUC 2.0 BCF
November 30	3,169,991 Mcf	1,820,107 Mcf
December 31	2,470,570 Mcf	1,370,356 Mcf
January 31	1,610,955 Mcf	915,087 Mcf
February 28	896,300 Mcf	523,832 Mcf
March 31	296,787 Mcf	136,988 Mcf

Q. HOW DOES MGUC PLAN TO UTILIZE ITS STORAGE INVENTORY UNDER VARYING WEATHER CONDITIONS DURING THE EARLY PART OF THE WINTER SEASON (NOVEMBER/DECEMBER)?

A. If, during the early part of the winter season (November/December), MGUC experiences colder than normal weather, it will utilize a combination of the following: (1) increase storage withdrawals; (2) increase Alternative Gas Suppliers' ("AGS") Daily Delivery Obligations ("DDOs"); (3) request that Transportation Customers increase nominations by matching or exceeding nominations to actual consumption; (4) declare a Constraint Day if circumstances are within the tariff limitations and if time allows; and (5) make daily, weekly, or rest-of-the-month purchases. This will allow MGUC to provide reliable gas service to its customers in the short term and to assure that adequate storage inventory is available for late winter (January/February/March). During warmer than normal weather, MGUC will reduce its storage withdrawals, reduce the AGS DDOs, request that Transportation Customers reduce nominations into their Authorized Tolerance Level ("ATL") balances by matching nominations to actual consumption, and declare a Constraint Day if circumstances are within the tariff limitations and time allows. The only other alternative available to MGUC for managing warmer weather is selling off excess supply to third parties.

Q. HOW DOES MGUC PLAN TO MANAGE ITS STORAGE DURING THE LATER PART OF THE WINTER SEASON (JANUARY – MARCH) IN COLDER THAN NORMAL WEATHER?

A. If colder than normal weather is experienced for a significant portion of the winter, or

during the later part of the winter, increased withdrawals will lower storage inventories and require MGUC to: (1) purchase supplies above normal plan levels for the first of the month; (2) increase the AGS DDOs; (3) request Transportation Customers increase nominations matching or exceeding nominations to actual consumption; and (4) declare a Constraint Day if circumstances are within the tariff limitations and time allows. The increases in first of the month supplies will be limited to between 1,000 Dth to 25,000 Dth per day. Additional supplies will be purchased on a daily, weekly, or rest-of-the-month basis, as needed, to meet weather demand and to maintain adequate inventory levels for the remaining winter month plan levels.

Q. HOW WILL MGUC MANAGE ITS STORAGE DURING WARMER THAN NORMAL WEATHER OCCURRING IN THE LATER PART OF THE WINTER SEASON (JANUARY – MARCH)?

A. If warmer than normal weather is experienced for the entire winter or the latter part of the winter, MGUC will increase withdrawals. In conjunction with higher withdrawals, MGUC will reduce first of the month purchases. This could expose MGUC to daily price increases if a late peak day cold weather event occurs. However, price volatility should be reasonable based on overall mild winter weather, resulting in adequate storage inventory levels. If near term fundamentals reflect concerns for supply availability, MGUC may consider leaving inventory in place and buying available spot supplies.

Q. HOW DOES MGUC PLAN TO MANAGE INJECTIONS OF SUPPLY INTO STORAGE DURING THE SUMMER MONTHS?

A. MGUC will only adjust injections based on ending inventory balances of each month during the injection season and inventory levels coming out of the winter period. MGUC will adjust its summer injection schedule on a ratable basis, spreading adjustments over any remaining months of the summer injection period. MGUC will not speculate on market movement or price variations during the summer. MGUC will need to purchase a portion of its supplies for October, and possibly November, on a weekly or daily basis due to operational limitations in Company-owned storage and to maintain operational flexibility. Exhibit A-7, page 3 of 22, lines 12-15, detail the monthly planned storage injections.

Q. DOES MGUC PLAN TO MAKE INJECTIONS INTO STORAGE DURING THE NOVEMBER THROUGH MARCH WINTER PERIOD?

A. Yes, but injections will typically be made for daily balancing purposes. Actual consumption can vary dramatically with usage patterns by individual customers and also with the weather. Because the Company's service territory does not have real-time monitoring at the individual customer level, MGUC uses system-wide monitoring data to make real-time adjustments to keep the system in balance. This includes moving excess supply into storage, withdrawing supply from storage to make up deficiencies, and acquiring and arranging for the delivery of additional supply when necessary. During colder than normal conditions, the Company uses its real-time, system-wide data, in tandem with the Company's supply, storage (including ANR's NNS) and gas transportation capacity arrangements, to ensure that critical natural gas service is not interrupted for any of its GCR or GCC customers. The Company, if time allows, may

also require an AGS to change the DDO volume multiple times during the month based on either warmer or colder than normal weather conditions. Because the Company cannot know the GCC customers' actual usage until the monthly bills are prepared, the Company must balance any intra-month and intra-day excesses or deficiencies in supply using its storage and other resources to ensure that service is not interrupted.

PEAK DAY PLAN

Q. WHAT IS THE COMPANY'S 2016/2017 PEAK DAY LOAD REQUIREMENT?

A. As shown in Exhibit A-11 (JPW-1) the 2016-2017 Peak Day load requirement is 218,367 Mcf. This load includes the peak day requirements for GCR customers for whom MGUC provides supply service and also the peak day requirements for GCC customers for whom MGUC must serve as the Supplier of Last Resort ("SOLR").

Q. PLEASE DESCRIBE MGUC'S PLAN FOR MEETING THE PEAK DAY LOAD REQUIREMENT FOR THE 2016-2017 PERIOD.

A. MGUC must hold both firm gas transportation capacity, firm natural gas supplies, and storage withdrawal capability to ensure the Company can meet peak day load requirements. MGUC contracts for firm gas transportation capacity and storage capacity in an amount to cover a portion of the GCR/GCC peak day requirements.

With respect to supplies, MGUC will use a combination of gas supplies to provide reliable service under peak day conditions. These supplies will include purchased gas

supplies from production areas delivered to the MGUC gate on MGUC transportation capacity, gas supplies from leased and indigenous storage, city gate deliveries, and swing or call supplies delivered to the MGUC city-gate. Exhibit A-3 (SRM-3) and A-4 (SRM-4) summarize MGUC's firm gas transportation capacity, storage withdrawal capacity, and estimated swing/call gas city-gate supplies for use to provide both GCR and GCC customers reliable gas service under peak day conditions.

Q. HOW ARE CALL OR SWING SUPPLY PACKAGES SELECTED?

A. MGUC uses a Request for Proposal ("RFP") process, which seeks competitive bids from service providers who have NAESB agreements with MGUC. The bids are analyzed against the company's requirements, and awarded to the successful bidder looking first at reliability, conformity, and then price.

Q. ARE THERE FIXED COSTS ASSOCIATED WITH THE CALL OR SWING PACKAGES?

A. Yes, but the cost is significantly less than securing the supply for the entire winter period, especially if the gas is not needed on a daily basis. The packages of gas are for a specific volume that MGUC has the right to call upon for a certain amount of days or volumes during a specific term period. The fixed cost for the call or swing service is based on the following formula: The daily volume of gas available multiplied by the number of days the service is available during the term of the agreement, multiplied by the unit cost per Dekatherm ("Dth") of service provided. For example, if the package of gas is for a volume of up to 5,000 Dth per day for up to 20 days and the fixed cost is $0.05 per Dth,

the total fixed cost would be (5,000 * 20) * 0.05 = $5,000. An estimate of these costs has been included in the Pipeline Demand/Supply Reservation Costs.

Q. ARE THERE ALTERNATIVES AVAILABLE TO PEAKING SERVICES?

A. Yes. MGUC could contract for base-load supplies to cover the Peak Day for all GCC and GCR customers, but some portion of this supply would need to be sold off on almost every day except the peak day. Additional storage capacity could be secured but, again, this is not needed for normal daily operations and MGUC would incur the additional expense of injecting gas into a storage account that is needed only for colder than normal days. The Company would also incur additional year-round fixed costs. Additional transportation capacity could be secured but, again, this is not needed for normal daily operations and MGUC would incur additional year-round or winter-only fixed costs. Finally, additional storage and transportation capacity is normally acquired for more than one year and this may cause MGUC to have excess capacity if its Peak Day for all GCC and GCR customers declined significantly from one year to the next.

Q. DOES THE ACQUISITION OF THE ADDITIONAL ASSETS DETAILED ABOVE AFFECT THE PEAKING SERVICES?

A. Yes. MGUC reduced the percentage of third party delivered supply to the City Gate on a Peak Day to about 18%. During the 2015-2016 GCR period, this percentage was 28%.

Q. WILL MGUC'S PEAK DAY SUPPLY MIX PROVIDE PROTECTION FOR TRANSPORTATION CUSTOMERS ON A PEAK DAY?

A. No, it will not. MGUC's GCR/GCC peak day supply mix of 218,366 Mcf is based upon providing firm peak day service for GCR and GCC customers only. MGUC does not provide SOLR service to Transportation customers. As such, there are no firm demand charges being paid to provide peak day service for Transportation customers. MGUC's Transportation tariff allows Transportation customers to build up positive ATL balances of up to 5% of their Annual Contract Quantity ("ACQ"). This means that when conditions are normal, Transportation customers also have the ability to deliver excess gas to MGUC up to their 5% ATL level. Under this arrangement, Transportation customers have access to these positive balances on a daily basis, provided a Constraint Day has not been declared. MGUC currently has an approved curtailment plan on file with the Commission that includes restrictions to the amount of access that ttransportation customers have to the ATL balances during critical operating conditions and, further, provides for daily balancing of transporter volumes under such conditions. Such access to ATL balances can be further restricted by MGUC through issuances of Constraint Days in accordance with MGUC's tariff.

Q. DOES MGUC HAVE OPTIONS AVAILABLE TO MINIMIZE THE POSSIBILITY OF INTERRUPTION OF GAS SERVICE TO GCR AND GCC CUSTOMERS IN THE EVENT THAT TEMPERATURE CONDITIONS EXCEED THOSE INCLUDED IN THE PEAK DAY?

A. Yes, it does. MGUC has cost effective options to minimize the possibility of interruption of gas service to GCR/GCC customers. If the forecast is above the Peak Day level, MGUC would take appropriate action to manage the system and procure additional

supply, if necessary, in various ways, depending on availability and cost. These include the following:

- Withdrawing gas from MGUC and ANR storage at volumes above planned levels;
- Revising AGS DDOs to an appropriate volume;
- Limiting Transportation customer access to ATL balances;
- Utilizing authorized overruns from the pipelines or other third party suppliers;
- Purchasing additional city gate gas on a daily or intra-day basis;
- Purchasing gas from or curtailing Transportation customers; and
- Taking unauthorized gas from the pipelines as a last resort.

SUPPLY PURCHASE STRATEGY

Q. PLEASE DESCRIBE THE COMPANY'S OVERALL SUPPLY PURCHASE STRATEGY.

A. The 2016-2017 Plan year will include the Company's purchase of approximately 20% of its annual supply requirement at hedged prices and the remaining 80% at an index price. A combination of the two will be used to fill storage to a level of about one-third of annual sales. The combination of hedged prices and storage will help reduce price volatility as further detailed in Mr. Wirick's direct testimony, which also details the methodology for procuring the hedge supplies.

Q. PROVIDE AN OUTLINE DESCRIBING MGUC'S STRATEGY FOR DETERMINING IT'S MIX OF SUPPLIES.

A. MGUC employs a mix of supply options. Term supplies, which are supplies for longer than one month, have the first priority in MGUC's supply mix. First of the month ("FOM") base-load supplies will be the next priority. As colder weather occurs, and if time permits, the Company will increase storage withdrawals, increase AGS DDOs, request Transportation customers match supply to actual consumption and bring in additional supply, call upon the swing/call packages it has under contract, and then, as a last priority, utilize daily purchases. Daily purchases will be used in situations where cold weather conditions or operational concerns dictate the need for daily supplies to cover system loads greater than normal situations. For example, maintaining adequate pipeline pressure levels or adequate inventory, might dictate the need for additional supplies at a specific MGUC location. As warm weather or holidays occur, and if time permits, the Company may increase storage injections, decrease AGS DDOs, request Transportation customers to match supply to actuals and bring in less than consumption, and finally utilize daily off-system sales as a last priority. Daily off-system sales will be used in situations where warm weather conditions, decreased load, holiday or operational concerns dictate the need for the elimination of daily supplies when system loads are less than normal. For example, to reduce the possibility of a pipeline overrun by reducing the inventory of supply at a specific MGUC city-gate.

Q. DESCRIBE THE PHILOSOPHIES MGUC INCORPORATES IN ITS SUPPLY DECISIONS.

A. MGUC has the following philosophies: (1) Provide the most reliable, cost-effective service to MGUC's customers, within the current physical constraints of its system; (2)

Participate in federal regulatory proceedings to develop and negotiate services, rate design, and tariff provisions which are beneficial to MGUC's customers; (3) Continue to evaluate alternative pipeline development opportunities to serve MGUC's communities in order to provide alternatives to captive communities; (4) Select a level of firm transportation, call/swing packages and storage from pipeline and service suppliers to cover peak day conditions for GCR and GCC; and (5) Monitor futures pricing and continue the hedging program for a portion of MGUC's portfolio to help manage price volatility.

Q. PLEASE DESCRIBE MGUC'S HEDGING PROGRAM FOR THE 2016-2017 PERIOD.

A. Beyond MGUC's use of seasonal storage and supply purchase strategy, efforts to further mitigate customer exposure to price volatility primarily include continuing the Hedging Plan as detailed in Mr. Wirick's testimony. For the 2016-2017 Plan year the Company plans to hedge approximately 20% of its annual supply requirements. The seasonal distribution will be approximately 20% of both its planned winter purchase requirements and its planned summer purchase requirements at hedged prices and the remaining 80% will be purchased at an index price. A combination of the two will be used to fill storage to a level equal to one-third of annual sales. The combination of hedged prices and storage will help reduce further price volatility. Mr. Wirick explains the hedging methodology in his direct testimony and exhibits.

Q. DOES THE COMPANY HAVE TERM SUPPLY AGREEMENTS OR ASSET MANAGEMENT AGREEMENTS ALREADY IN PLACE FOR

THE 2016-2017 GCR PLAN PERIOD?

A. No. Historically term supply agreements and AMAs are typically entered into during April to May for the summer, and August to October for the winter. MGUC expects to enter into both these types of agreements during the 2016-2017 GCR Plan Period if the Company finds it prudent.

Q. ARE THERE ANY ASSET MANAGEMENT AGREEMENTS MGUC IS CONSIDERING ENTERING INTO FOR THE 2016-2017 GCR PLAN PERIOD?

A. Yes, although MGUC has not entered into any at this point, it plans to request bids for the PEPL AMA for the winter period and for the ANR SW for both the summer and winter periods.

SECTION IV – TOTAL COST OF GAS

Q. PLEASE DESCRIBE EXHIBIT A-6.

A. Exhibit A-6 (SRM-6), summarizes the sources of supply for each GCR period from 2016-2017 through 2020-2021, including storage injections and withdrawals.

Q. PLEASE DESCRIBE EXHIBIT A-7.

Page 1 summarizes the costs associated with the gas in the GCR periods, including the commodity costs, the pipeline demand/supply reservation costs, total demand, total purchased or produced, total cost of gas, total projected GCR costs and total GCR supply.

Page 2 summarizes the volumes, prices and costs related to local production connected to MGUC.

Page 3 details the 2016-2017 GCR supply allocation by sources of supply, storage injections and withdrawals, and total GCR supply.

Page 4 details the commodity and transportation charges associated with the 2016-2017 GCR period.

Page 5 details the city gate commodity costs and the pipeline demand/supply/reservation costs for the 2016-2017 GCR period.

Page 6 details the storage activity including injections and withdrawals for the 2016-2017 GCR period.

Pages 7 through 10 detail the 2017-2018 GCR Period.
Pages 11 through 14 detail the 2018-2019 GCR Period.
Pages 15 through 18 detail the 2019-2020 GCR Period.
Pages 19 through 22 detail the 2020-2021 GCR Period.

Fixed Cost

Q. WHAT ARE MGUC'S TOTAL ESTIMATED FIXED COSTS OF GAS FOR THE 2016-2017 GCR PERIOD?

A. The fixed costs are the pipeline demand/supply reservation costs listed in Exhibit A-3 (SRM-3). These pipeline demand/supply reservation costs are associated with the supply system assets I described earlier in my testimony. These costs are quantified and totaled in Exhibit A-7, page 1 of 22. For the 2016-2017 GCR period the total fixed costs are anticipated to be $13,267,943.

Commodity Cost

Q. PLEASE DESCRIBE THE CURRENT STATE OF THE NATURAL GAS MARKET.

A. Gas prices have remained relatively flat over the last few months as seen in Exhibit A-5, page 2 of 3.

Q. WHAT PROCESS DID MGUC FOLLOW TO ARRIVE AT ITS PRICING ASSUMPTIONS FOR THE 2016-2017 GCR PLAN?

A. MGUC followed its traditional six-step process to develop its pricing assumptions. MGUC utilized a five-day average for the NYMEX prices with one modification. The six steps are as follows:

(i) Obtain the average NYMEX prices for the twelve months beginning April 2016 (Exhibit A-5 (SRM-5), page 1 of 3) using the closing prices for December 1st, 2nd, 3rd, 4th, and 7th;

(ii) Obtain, the forward basis curve created on December 7, 2015 for the various supply basins from which MGUC will purchase gas (Exhibit A-5 (SRM-5) page 2

of 3)

(iii) Combine 1 and 2 above to project the "into the pipe or city gate" price for gas for each supply basin for each month in 2016/2017 (Exhibit A-5 (SRM-5), page 1 of 3);

(iv) Obtain historical BTU factors for each of the pipelines that serve MGUC (Exhibit A-5 (SRM-5), page 3 of 3);

(v) Project the commodity cost of transportation and fuel on each pipeline which delivers the gas from the respective supply basins; and

(vi) Combine the "into the pipe" gas cost with the commodity transportation, fuel, and BTU factors to obtain a delivered city gate price.

Q. BASED ON THIS PROCESS, WHAT ARE THE KEY PRICING ASSUMPTIONS?

A. Exhibit A-5 (SRM-5) covers all the pricing assumptions. Key assumptions from that exhibit are as follows:

- Utilized NYMEX prices for the twelve months beginning April 2016 based on the prices reflected by averaging the NYMEX settle for the first five consecutive days in December 2015.

- Utilized the average of the forward price curves beginning April 2016 based on the data available December 8, 2015 "into the pipe" information.

Q. PLEASE EXPLAIN THE NYMEX AND BASIS DIFFERENTIALS.

A. In 1990, the NYMEX began trading natural gas futures as a means of price discovery and a method to manage price risk. The NYMEX is an open call system where buyers and sellers agree to transact business at a certain price, which is subsequently reflected on the NYMEX price screen. The price transactions on the NYMEX reflect the prices for deliveries near Erath, Louisiana, where a number of pipelines converge, providing significant market liquidity. This is also where a futures contract must be delivered if it is not closed out before the particular trading month expires. Very few futures contracts are brought to delivery. Since many industry participants are not geographically located to obtain delivery at Erath, Louisiana, they must make adjustments to the NYMEX price to obtain a price, which is reflective of prices in their geographic area. Such geographic differences are known as basis differentials. Consequently, MGUC must adjust the NYMEX prices by the appropriate basis differential to reflect prices in the Mid-Continent, Gulf Coast and Michigan.

Q. WHY DOES MGUC USE THE NYMEX FOR ITS PRICING PROJECTIONS?

A. It is the best forward looking mechanism available to evaluate what industry buyers and sellers are willing to pay for gas in the future and, therefore, forecasts the price of natural gas. While it changes on a minute-by-minute basis, it is a reasonable proxy for price expectations in the future based on current known conditions.

Q. WHAT COSTS ARE INCLUDED IN THE CATEGORY "OTHER" COMMODITY CHARGES?

A. The charges included in this category generally fall into three areas. First the injection and withdrawal fees associated with ANR Firm Storage service. Second the costs associated with the various pipelines' balancing services such as ANR NNS. Third, the average unrealized gain or loss of the hedges for December 1st, 2nd, 3rd, 4th, and 7th 2015. As of December 8th, 2015 MGUC had engaged in hedges for April 2016 through December 2016.

Alternative Fuels Comparison

Q. DO YOU BELIEVE THAT MGUC'S DECISIONS TO OBTAIN GAS AND RELATED SERVICES IN THE MANNER DESCRIBED IN THE COMPANY'S 2016-2017 GCR PLAN ARE REASONABLE AND PRUDENT IN LIGHT OF THE ALTERNATIVE SUPPLY OPTIONS AVAILABLE TO MGUC'S CUSTOMERS?

A. Yes I do. The following table summarizes some of the alternative heating fuels that may be available to MGUC customers and compares them on a cost per therm basis:

Fuel Type	Cost/Unit	Conversion Factor	Cost/Therm
Heating Oil	2.50/gallon	1.389	$1.7999
Propane	1.69/gallon	0.912	$1.8531
Electricity	$0.0955/kWh	0.03413	$2.7981
Natural Gas	$3.3249/Mcf	10.2	$0.326

The heating oil and the propane price is the 2015-16 forecasted price per gallon from the Energy Information Administration's Short Term Energy Outlook Table WF01. The electric price is from the current DTE residential space heating service rate. The natural gas price is MGUC's proposed rate in this filing. This data shows natural gas to be a reasonable and prudent source of energy relative to the alternatives.

SECTION V – FIVE YEAR FORECAST

Q. WHAT ASSUMPTIONS ARE USED IN THE 2016-2017 TO 2020-2021 FIVE-YEAR FORECASTS?

A. As reflected in Gas Sales Forecast Exhibit A-15 (DJT-2), page 2 of 9, MGUC has included an annual total GCR send-out of 16,393,440 Mcf. This annual load is met with the current supply and transportation contracts (as shown in Exhibit A-3 (SRM-3)).

Q. WHAT ARE THE ANTICIPATED SOURCES OF SUPPLY FOR THE 2016-2017 TO 2020-2021 FIVE-YEAR FORECASTS?

A. MGUC expects to utilize gas sourced from ANR, PEPL, Storage, and Local Production. The detail source of supply for each GCR Period is found on Exhibit A-7 on the following pages:

2016-2017	Page 3
2017-2018	Page 7
2018-2019	Page 11
2019-2020	Page 15
2020-2021	Page 19

Q. WHAT ARE THE PRICING ASSUMPTIONS FOR THE 2016-2017 TO 2020-2021 FIVE-YEAR FORECASTS?

A. Pricing in the 2016/2017 through 2020/2021 time frame reflects a 3% escalation from the NYMEX prices for the twelve months beginning April 2016. The basis differentials should remain similar for all of the supply basins serving MGUC because MGUC has no information suggesting a deviation.

Q. WHY ARE YOU CONSIDERING FORWARD PRICE CURVES?

A. No one can predict with certainty what gas prices are going to be because so many variables impact those future prices. However, a forward curve represents the prices at which the market is willing to transact future business today. It is the market's "best guess" of what future spot prices will be as of the current point in time, using available current information. Those prices may, or may not, turn out to be the actual future spot prices, as any new pieces of information will change the market's expectation all the way up until actual settlement. Thus, forward curves are constantly changing as new information become available to the market.

Q. WHAT PIPELINE TRANSPORTATION RATES WERE APPLIED TO THE SOURCES OF SUPPLY FOR THE FIVE-YEAR FORECAST?

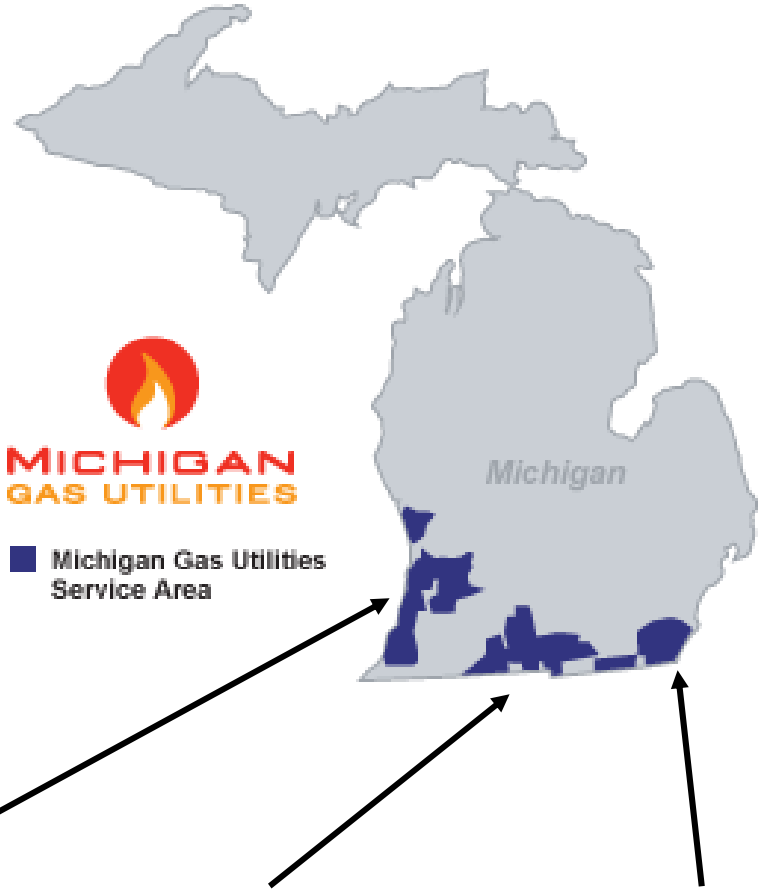
A. The pipeline transportation rates utilized for all sources are those set forth on Exhibit A-7 (SRM-7) and represent the contracted rates for MGUC contracts.

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY AT THIS TIME?

A. Yes it does.

CASE NO. U-17940
EXHIBIT A-1 (SRM-1)
WITNESS: Sarah R. Mead

Service Areas and Pipeline/Storage Accessibility



Western Area (Group 1)
Benton Harbor (ANR)
Berrien Springs (ANR)
Fennville (ANR)
South Haven (ANR)
Grand Haven (ANR, DTE)
Coopersville (ANR)
Otsego North (ANR, CP, Production)
Otsego South (ANR,CP)

Coldwater Area (Group2)
Coldwater (ANR, CP, PEPL, TRKL, MGUC)
Coldwater Lake (ANR)

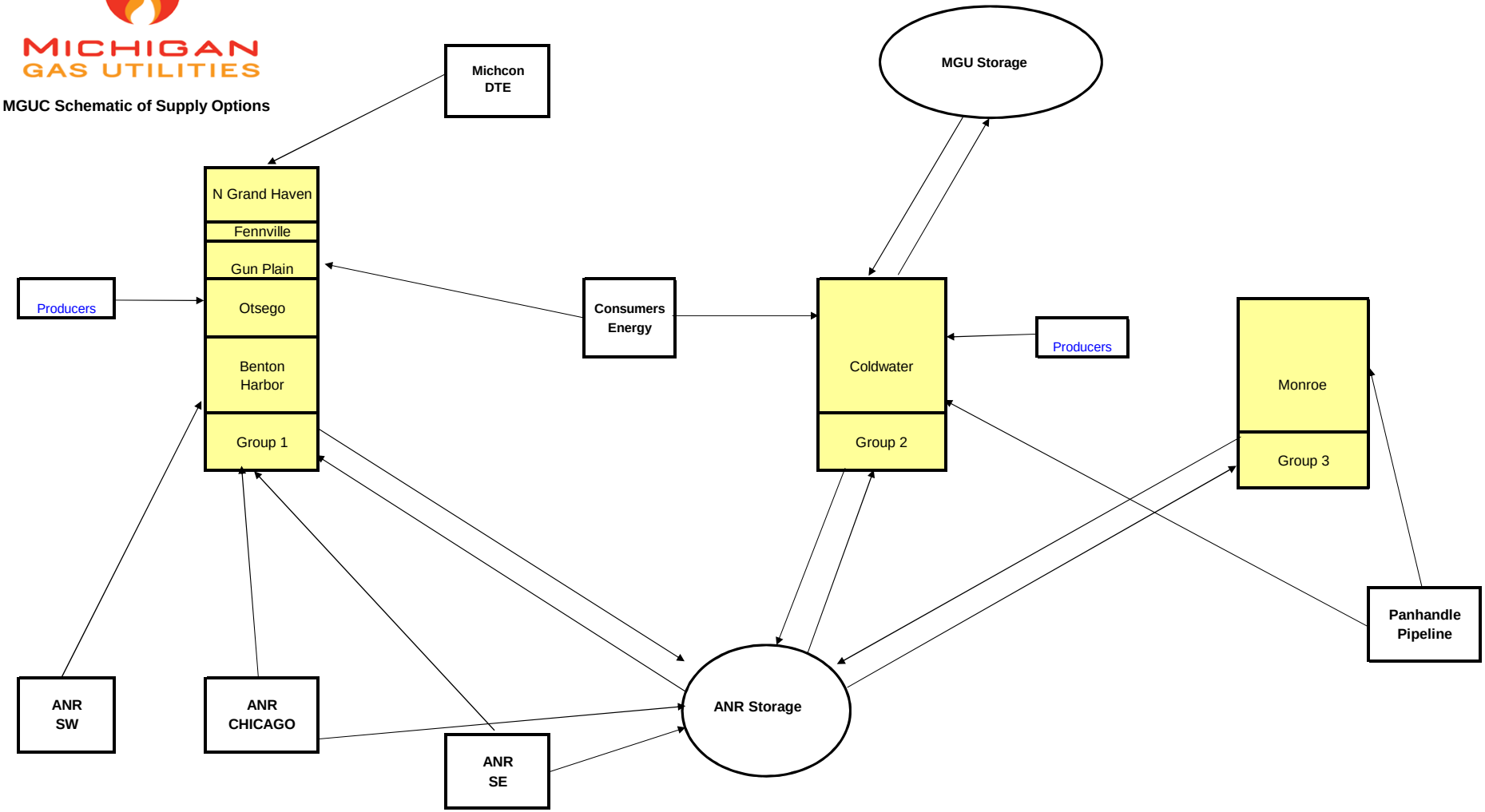
Monroe Area (Group 3)
Monroe (ANR, PEPL)
Morenci (ANR)

ANR Storage is accessible to all three groups

Case No: U-17940
Exhibit: A-2 (SRM-2)
Witness: Sarah R. Mead

MICHIGAN GAS UTILITIES

MGUC Schematic of Supply Options



	LINE	DESCRIPTION **FACILITY**	MDQ (a)	ACQ (b)	Contract Expires (c)	DEMAND CHARGE (d)	COMM. RATE (e)
TRANSPORTATION	1	ANR ETS - SOUTHWEST #109422 (Winter)	7,000	1,057,000	3/17	$10.008 x MDQ	$0.0183
	2	ANR ETS - SOUTHWEST #109422 (Summer)	4,000	856,000	3/17	$10.008 x MDQ	$0.0183
	4	ANR ETS - SOUTHEAST #110024 (Annual)	15,000	5,475,000	3/17	$6.3875 x MDQ	$0.0163
	5	ANR ETS - STORAGE#110019 (Winter)	53,805	8,124,555	3/17	$5.008 x MDQ	$0.0084
		ANR ETS - STORAGE#110020,110022 (Winter)	8,680	1,310,680	3/17	$5.008 x MDQ	$0.0084
	6	ANR ETS - STORAGE#110019 (April)	33,000	990,000	3/17	$5.008 x MDQ	$0.0084
	5	ANR ETS - STORAGE#126355 (Winter)	15,000	2,265,000	3/17	$5.008 x MDQ	$0.0084
	7	PANHANDLE - EFT (Annual) #17000	14,000	5,110,000	3/19	$13.41 x MDQ	$0.0440
	8	PANHANDLE - EFT (Winter) #17000	33,000	4,983,000	3/19	$13.41 x MDQ	$0.0440
	9	ANR FTS - CHICAGO #126356 (Annual)	5,000	1,825,000	3/18	$4.40 x MDQ	$0.0098
	10	DTE MichCon - #4078-03 (Winter)	5,000	755,000	3/18	$3.0266 X MDQ	$0.0000
STORAGE	11	ANR FSS - #110023	63,199w/18,057i	3,159,950	3/17	$2.50 x ACQ capacity only	$0.4095
	12	ANR NNS - #110025	15,000w/10,000s		3/17	$6.423 x MDQ	$0.0147
	13	ANR FSS - #126354	15,171w/4,335i	758,550	3/18	$1.042 x ACQ capacity only	$0.1700
	14	MGU STORAGE	30,000	3,904,000			
	15	Consumers (Cancelled)					

MGU Asset Summary

PipeLine Contracts

Line number		PipeLine Contracts	Contract No.	Contract Type	End Date	Primary Receipt Point	Primary Delivery Point	Del. Qty.	Availability	Demand	Commodity
1	Transportation	ANR	#109422	ETS	3/31/2017	SW Headstation	Group 1 MGU	7,000	winter	$ 10.008	$ 0.0183
2		ANR	#109422	ETS	3/31/2017	SW Headstation	Group 1 MGU	4,000	summer	$ 10.008	$ 0.0183
3											
4		ANR	#110024	ETS	3/31/2017	SE Headstation	Group 1 MGU	15,000	annual	$ 6.3875	$ 0.0163
5											
6		ANR	#110019	ETS	3/31/2017	Storage	Group 1 MGU	53,805	winter	$ 5.008	$ 0.0084
7		ANR	#110019	ETS	3/31/2017	Storage	Group 1 MGU	33,000	April Only	$ 5.008	$ 0.0084
8											
9		ANR	#110020	ETS	3/31/2017	Storage	Group 2 MGU	800	winter	$ 5.008	$ 0.0084
10											
11		ANR	#110022	ETS	3/31/2017	Storage	Group 3 MGU	7,880	winter	$ 5.008	$ 0.0084
12											
13		ANR	#110025	NNS	3/31/2017	Storage	Group 1 MGU	9,167	summer	$ 6.423	$ 0.0147
14		ANR	#110025	NNS	3/31/2017	Storage	Group 1 MGU	14,167	winter	$ 6.423	$ 0.0147
15		ANR	#110025	NNS	3/31/2017	Storage	Group 2 MGU	357	annual	$ 6.423	$ 0.0147
16		ANR	#110025	NNS	3/31/2017	Storage	Group 3 MGU	476	annual	$ 6.423	$ 0.0147
17											
18		ANR	#126355	ETS	3/31/2018	Storage	Group 1 MGU	15,000	winter	5.008	0.0084
19											
20		ANR	#126356	FTS	3/31/2018	Chicago	Group 1 MGU	5,000	annual	4.4	0.0098
21											
22		DTE	#4078-03	Firm	3/31/2018	North Grand Haven	MGU	5,000	winter	$ 3.0266	
23		PEPL	#17000	EFTS	3/31/2019	KN Grant #1, Grant Co., KS - 09223	MGU	8,750	winter	$ 13.4100	$ 0.0440
24		PEPL	#17000	EFTS	3/31/2019	Crescendo, Moore Co., TX - 40524	MGU	9,750	winter	$ 13.4100	$ 0.0440
25		PEPL	#17000	EFTS	3/31/2019	Pepl CIG Exchange, Kearney Co., KS - 06204	MGU	4,750	winter	$ 13.4100	$ 0.0440
26		PEPL	#17000	EFTS	3/31/2019	Transwestern Sneed, Hansford Co., TX - 07011	MGU	8,750	winter	$ 13.4100	$ 0.0440
27		PEPL	#17000	EFTS	3/31/2019	South Rattlesnake, Kiowa Co., KS - CHYPL	MGU	15,000	winter	$ 13.4100	$ 0.0440
28		PEPL	#17000	EFTS	3/31/2019	KN Grant #1, Grant Co., KS - 09223	MGU	3,500	summer	$ 13.4100	$ 0.0440
29		PEPL	#17000	EFTS	3/31/2019	Crescendo, Moore Co., TX - 40524	MGU	3,500	summer	$ 13.4100	$ 0.0440
30		PEPL	#17000	EFTS	3/31/2019	Pepl CIG Exchange, Kearney Co., KS - 06204	MGU	3,500	summer	$ 13.4100	$ 0.0440
31		PEPL	#17000	EFTS	3/31/2019	Hansford Co., TX -	MGU	3,500	summer	$ 13.4100	$ 0.0440
32											
33	Storage						Daily Withdrawal	Daily Injection			
34		ANR	#110023	FSS	3/31/2017		63,199	18,057	Storage Res	$0.4095 / $2.50	
35											
36		ANR	#126354	FSS	3/31/2018		15,171	4,335	Storage Res	$0.17/$1.0420	
37											
38		Consumers (Cancelled)									
39											
40		MGU Storage					30,000	20,000			
41											
42											
43	Production	Otsego North						5			
44											
45											
46											

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION

Case No. U-17940
Exhibit A-4 (SRM-4)
Witness: Sarah R. Mead

Peak Day Requirement Analysis

				2016-17	Western	Coldwater	Monroe
			Peak Day (Mcf)	**218,367**	113,171	39,234	65,962
			Btu factor	1.0405			
			Peak Day (Dth)	**227,211**	117,754	40,823	68,633
LINE	**Pipe**	**Transport**		MDQ			
1	**ANR SW**	109422		7,000	7,000		
2	**ANR Sto**	110019		38,805	38,805		
3		110020		800		800	
4		110022		7,880			7,880
5		126355		15,000	15,000		
6	**ANR SE**	110024		15,000	15,000		
7	**ANR CHICAGO**	126356		5,000	5,000		
8	**DTE MichCon**	4078-03		5,000	5,000		
10	**MGUC**	Storage		30,000		30,000	
11		Producers		165	165		
12	**PEPL**	17000		47,000		3,517	43,483
13	**Sub Total**			171,650	85,970	34,317	51,363
14	**ANR NNS (110025)**			15,000	14,167	357	476
15	**Total**			186,650	100,137	34,674	51,839
16	**Call and or Swing Supply (City-gate)**			40,561	17,617	6,149	16,794
17	**Grand Total**			227,211	117,754	40,823	68,633

NYMEX Closing Figures - Five Day Average

Date	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
12/1/2015	$2.3530	$2.3990	$2.4450	$2.4910	$2.5060	$2.5050	$2.5250	$2.6040	$2.7610	$2.8690	$2.8640	$2.8210
12/2/2015	$2.3060	$2.3520	$2.3990	$2.4480	$2.4650	$2.4650	$2.4850	$2.5660	$2.7260	$2.8340	$2.8310	$2.7910
12/3/2015	$2.3030	$2.3490	$2.3970	$2.4460	$2.4620	$2.4610	$2.4820	$2.5600	$2.7200	$2.8280	$2.8240	$2.7850
12/4/2015	$2.3160	$2.3600	$2.4050	$2.4510	$2.4680	$2.4690	$2.4900	$2.5660	$2.7240	$2.8310	$2.8260	$2.7880
12/7/2015	$2.2370	$2.2910	$2.3400	$2.3900	$2.4170	$2.4220	$2.4430	$2.5290	$2.6890	$2.7970	$2.7930	$2.7550
Average	$2.303	$2.350	$2.397	$2.445	$2.464	$2.464	$2.485	$2.565	$2.724	$2.832	$2.828	$2.788

Escalation factor = 3.0%

FUTURES PRICE (Henry Hub):

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
2016-17	$2.303	$2.350	$2.397	$2.445	$2.464	$2.464	$2.485	$2.565	$2.724	$2.832	$2.828	$2.788
2017-18	$2.372	$2.421	$2.469	$2.519	$2.538	$2.538	$2.560	$2.642	$2.806	$2.917	$2.912	$2.872
2018-19	$2.443	$2.493	$2.543	$2.594	$2.614	$2.614	$2.636	$2.721	$2.890	$3.004	$3.000	$2.958
2019-20	$2.517	$2.568	$2.619	$2.672	$2.692	$2.693	$2.715	$2.803	$2.977	$3.094	$3.090	$3.047
2020-21	$2.592	$2.645	$2.698	$2.752	$2.773	$2.774	$2.797	$2.887	$3.066	$3.187	$3.182	$3.138

ANR LOUISIANA BASIS PRICE: Transportation Surcharges: $ 0.0163 Fuel: 2.32%

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
2016-17	$2.225	$2.273	$2.320	$2.368	$2.386	$2.387	$2.407	$2.487	$2.646	$2.754	$2.750	$2.710
2017-18	$2.294	$2.343	$2.391	$2.441	$2.460	$2.461	$2.482	$2.564	$2.728	$2.839	$2.835	$2.794
2018-19	$2.366	$2.416	$2.465	$2.516	$2.536	$2.537	$2.559	$2.644	$2.812	$2.927	$2.922	$2.880
2019-20	$2.439	$2.490	$2.542	$2.594	$2.614	$2.615	$2.638	$2.725	$2.899	$3.017	$3.012	$2.969
2020-21	$2.514	$2.567	$2.620	$2.674	$2.695	$2.696	$2.719	$2.809	$2.988	$3.110	$3.105	$3.060

ANR OKLAHOMA BASIS PRICE: Transportation Surcharges: $ 0.0183 Fuel: 4.13%

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
2016-17	$2.128	$2.176	$2.223	$2.271	$2.289	$2.290	$2.310	$2.390	$2.549	$2.657	$2.653	$2.613
2017-18	$2.197	$2.246	$2.295	$2.344	$2.363	$2.364	$2.385	$2.467	$2.631	$2.742	$2.738	$2.697
2018-19	$2.269	$2.319	$2.369	$2.420	$2.439	$2.440	$2.462	$2.547	$2.715	$2.830	$2.825	$2.783
2019-20	$2.342	$2.394	$2.445	$2.497	$2.517	$2.518	$2.541	$2.628	$2.802	$2.920	$2.915	$2.872
2020-21	$2.417	$2.471	$2.523	$2.577	$2.598	$2.599	$2.622	$2.712	$2.891	$3.013	$3.008	$2.963

CHICAGO PRICE: Transportation Surcharges: $ 0.0098 Fuel: 1.13%

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
2016-17	$2.275	$2.323	$2.370	$2.418	$2.436	$2.437	$2.457	$2.537	$2.696	$2.804	$2.800	$2.760
2017-18	$2.344	$2.393	$2.441	$2.491	$2.510	$2.511	$2.532	$2.614	$2.778	$2.889	$2.885	$2.844
2018-19	$2.416	$2.466	$2.515	$2.566	$2.586	$2.587	$2.609	$2.694	$2.862	$2.977	$2.972	$2.930
2019-20	$2.489	$2.540	$2.592	$2.644	$2.664	$2.665	$2.688	$2.775	$2.949	$3.067	$3.062	$3.019
2020-21	$2.564	$2.617	$2.670	$2.724	$2.745	$2.746	$2.769	$2.859	$3.038	$3.160	$3.155	$3.110

PANHANDLE PRICE: Transportation Surcharges: $ 0.0440 Fuel: 4.15%

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
2016-17	$2.048	$2.095	$2.142	$2.190	$2.208	$2.209	$2.230	$2.310	$2.469	$2.576	$2.572	$2.533
2017-18	$2.117	$2.165	$2.214	$2.263	$2.282	$2.283	$2.304	$2.387	$2.550	$2.661	$2.657	$2.616
2018-19	$2.188	$2.238	$2.288	$2.339	$2.358	$2.359	$2.381	$2.466	$2.634	$2.749	$2.744	$2.702
2019-20	$2.261	$2.313	$2.364	$2.417	$2.437	$2.438	$2.460	$2.547	$2.721	$2.839	$2.834	$2.791
2020-21	$2.337	$2.390	$2.443	$2.497	$2.517	$2.518	$2.541	$2.632	$2.810	$2.932	$2.927	$2.883

MICHCON PRICE: Transportation Surcharges: NA Fuel: 1.63%

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
2016-17	$2.321	$2.368	$2.415	$2.463	$2.482	$2.482	$2.503	$2.583	$2.742	$2.850	$2.846	$2.806
2017-18	$2.390	$2.439	$2.487	$2.536	$2.555	$2.556	$2.577	$2.660	$2.824	$2.935	$2.930	$2.890
2018-19	$2.461	$2.511	$2.561	$2.612	$2.632	$2.632	$2.654	$2.739	$2.908	$3.022	$3.018	$2.976
2019-20	$2.534	$2.586	$2.637	$2.690	$2.710	$2.711	$2.733	$2.821	$2.994	$3.112	$3.108	$3.064
2020-21	$2.610	$2.663	$2.716	$2.770	$2.791	$2.792	$2.815	$2.905	$3.084	$3.205	$3.200	$3.156

CONSUMERS PRICE: Transportation Surcharges: $ 0.1181 Fuel: 1.83%

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
2016-17	$2.367	$2.414	$2.461	$2.509	$2.527	$2.528	$2.549	$2.629	$2.788	$2.895	$2.891	$2.852
2017-18	$2.436	$2.484	$2.533	$2.582	$2.601	$2.602	$2.623	$2.706	$2.869	$2.980	$2.976	$2.935
2018-19	$2.507	$2.557	$2.607	$2.658	$2.677	$2.678	$2.700	$2.785	$2.953	$3.068	$3.063	$3.021
2019-20	$2.580	$2.632	$2.683	$2.736	$2.756	$2.757	$2.779	$2.866	$3.040	$3.158	$3.153	$3.110
2020-21	$2.656	$2.709	$2.762	$2.816	$2.836	$2.837	$2.860	$2.951	$3.129	$3.251	$3.246	$3.202

ANR ML7 Transportation Surcharges: $ 0.0088 Fuel: 1.13%

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
2016-17	$2.312	$2.359	$2.406	$2.454	$2.473	$2.474	$2.494	$2.574	$2.733	$2.841	$2.837	$2.797
2017-18	$2.381	$2.430	$2.478	$2.528	$2.547	$2.548	$2.569	$2.651	$2.815	$2.926	$2.922	$2.881
2018-19	$2.452	$2.503	$2.552	$2.603	$2.623	$2.624	$2.646	$2.730	$2.899	$3.013	$3.009	$2.967
2019-20	$2.526	$2.577	$2.629	$2.681	$2.701	$2.702	$2.725	$2.812	$2.986	$3.104	$3.099	$3.056
2020-21	$2.601	$2.654	$2.707	$2.761	$2.782	$2.783	$2.806	$2.896	$3.075	$3.196	$3.192	$3.147

FIRST OF MONTH INSIDE FERC PUBLISHED PRICE

Line	mm/yy	FUTURES SETTLE	ANR LA	ANR OK	CHICAGO	PEPL	ANR ML7	MICHCON	CONSUMERS
1	Nov 2010	$3.2920	$3.2500	$3.0300	$3.4400	$3.0300	$3.5000	$3.5000	$3.3800
2	Dec 2010	$4.2670	$4.2200	$4.0900	$4.5100	$4.1000	$4.5500	$4.5200	$4.4500
3	Jan 2011	$4.2160	$4.1900	$3.9700	$4.4000	$3.9300	$4.5500	$4.4000	$4.4500
4	Feb 2011	$4.3160	$4.2600	$4.2500	$4.6300	$4.2300	$4.5700	$4.5200	$4.5100
5	Mar 2011	$3.7930	$3.7400	$3.6400	$3.9500	$3.6300	$4.0900	$4.0300	$3.9900
6	Apr 2011	$4.2400	$4.2000	$4.1300	$4.4000	$4.1200	$4.5200	$4.5600	$4.4600
7	May 2011	$4.3770	$4.3300	$4.1400	$4.4900	$4.1200	$4.6400	$4.6500	$4.5900
8	Jun 2011	$4.3260	$4.2700	$4.2100	$4.3800	$4.1200	$4.4600	$4.5800	$4.5600
9	Jul 2011	$4.3570	$4.3100	$4.2200	$4.3800	$4.1400	$4.5600	$4.5000	$4.5500
10	Aug 2011	$4.3700	$4.3100	$4.2500	$4.4900	$4.2200	$4.5600	$4.5500	$4.5400
11	Sep 2011	$3.8570	$3.8100	$3.7900	$3.9600	$3.7400	$4.0500	$4.1000	$4.0500
12	Oct 2011	$3.7590	$3.6900	$3.6700	$3.9200	$3.6600	$3.9900	$4.0000	$3.9700
13	Nov 2011	$3.5240	$3.4500	$3.4200	$3.8300	$3.4100	$3.8100	$3.8400	$3.7300
14	Dec 2011	$3.3640	$3.3000	$3.3300	$3.7200	$3.3600	$3.6900	$3.6200	$3.5800
15	Jan 2012	$3.0840	$3.0000	$2.9700	$3.3100	$2.9900	$3.3000	$3.2700	$3.2500
16	Feb 2012	$2.6780	$2.6200	$2.5900	$2.7700	$2.5500	$2.8800	$2.8600	$2.8500
17	Mar 2012	$2.4460	$2.4000	$2.3600	$2.5900	$2.3800	$2.7200	$2.6200	$2.5900
18	Apr 2012	$2.1910	$2.0800	$1.9600	$2.1600	$1.9500	$2.2400	$2.3300	$2.3100
19	May 2012	$2.0360	$1.9900	$1.8500	$2.0900	$1.8700	$2.2300	$2.1700	$2.1900
20	Jun 2012	$2.4290	$2.3600	$2.3900	$2.5900	$2.4100	$2.6400	$2.5400	$2.5200
21	Jul 2012	$2.7740	$2.6800	$2.6000	$2.7900	$2.6200	$2.8100	$2.8000	$2.8200
22	Aug 2012	$3.0100	$2.9500	$2.9400	$3.1700	$2.9400	$3.1200	$3.1700	$3.1100
23	Sep 2012	$2.6340	$2.5500	$2.4400	$2.7600	$2.4400	$2.8000	$2.7700	$2.7500
24	Oct 2012	$3.0230	$2.9500	$2.7100	$3.1600	$2.7600	$3.1600	$3.1800	$3.1600
25	Nov 2012	$3.4710	$3.4000	$3.3000	$3.6800	$3.2900	$3.7600	$3.7200	$3.6860
26	Dec 2012	$3.6960	$3.6300	$3.5800	$3.9400	$3.5700	$3.9400	$3.9400	$3.9100
27	Jan 2013	$3.3540	$3.3100	$3.2600	$3.5200	$3.2300	$3.5600	$3.5200	$3.5500
28	Feb 2013	$3.2260	$3.1800	$3.2100	$3.4300	$3.2100	$3.5100	$3.4000	$3.4200
29	Mar 2013	$3.4270	$3.3800	$3.2300	$3.5500	$3.2200	$3.5500	$3.5700	$3.5600
30	Apr 2013	$3.9760	$3.9500	$3.8200	$4.1700	$3.8100	$4.1900	$4.1900	$4.2200
31	May 2013	$4.1520	$4.1100	$3.9900	$4.3300	$3.9900	$4.3500	$4.4000	$4.4500
32	Jun 2013	$4.1480	$4.0700	$4.0200	$4.2500	$3.9400	$4.4000	$4.4100	$4.4200
33	Jul 2013	$3.7070	$3.6300	$3.5000	$3.7500	$3.4300	$3.8200	$3.8800	$3.9300
34	Aug 2013	$3.4590	$3.3800	$3.3900	$3.6200	$3.3100	$3.5900	$3.7100	$3.7200
35	Sep 2013	$3.5670	$3.4800	$3.3600	$3.6300	$3.3000	$3.6900	$3.7700	$3.8100
36	Oct 2013	$3.4980	$3.4200	$3.3400	$3.6400	$3.2500	$3.6700	$3.6900	$3.7200
37	Nov 2013	$3.4960	$3.4200	$3.4600	$3.7500	$3.3900	$3.7100	$3.6600	$3.6800
38	Dec 2013	$3.8180	$3.7300	$3.5500	$3.9000	$3.4800	$3.9300	$3.8900	$3.9400
39	Jan 2014	$4.4070	$4.3200	$4.3300	$4.8300	$4.2700	$4.7600	$4.6800	$4.7300
40	Feb 2014	$5.5570	$5.4800	$5.1500	$8.1200	$5.2900	$8.1300	$6.9200	$8.2000
41	Mar 2014	$4.8550	$4.7600	$5.2500	$10.9400	$5.1700	$10.1000	$11.3600	$11.6300
42	Apr 2014	$4.5840	$4.5300	$4.3700	$4.9800	$4.3000	$5.3300	$5.2000	$5.2800
43	May 2014	$4.7950	$4.7200	$4.4500	$4.8500	$4.3100	$4.8300	$4.9400	$4.9600
44	Jun 2014	$4.6190	$4.5400	$4.2100	$4.6500	$4.1600	$4.7000	$4.8400	$4.8300
45	Jul 2014	$4.4000	$4.5400	$4.2100	$4.6500	$4.1600	$4.7000	$4.8400	$4.8300
46	Aug 2014	$3.8080	$3.7400	$3.6200	$3.8700	$3.5700	$3.9700	$3.9400	$3.9600
47	Sep 2014	$3.9570	$3.9100	$3.7900	$4.0100	$3.7400	$4.0500	$4.0500	$4.0600
48	Oct 2014	$3.9840	$3.9300	$3.7500	$4.0700	$3.7400	$4.0900	$4.0400	$4.0800
49	Nov 2014	$3.7280	$3.6500	$3.4400	$3.7500	$3.4400	$3.8800	$3.8600	$3.8600
50	Dec 2014	$4.2820	$4.1900	$4.3500	$5.1700	$4.2200	$5.1800	$4.8700	$4.9400
51	Jan 2015	$3.1890	$3.1100	$3.1700	$3.6100	$3.0700	$3.5700	$3.4300	$3.5500
52	Feb 2015	$2.8660	$2.8100	$2.7500	$3.0200	$2.6200	$3.0600	$2.9600	$3.0400
53	Mar 2015	$2.8940	$2.8600	$2.6800	$3.6700	$2.6200	$3.8200	$3.4700	$3.6500
54	Apr 2015	$2.5900	$2.5200	$2.3500	$2.6500	$2.2500	$2.7800	$2.7100	$2.7600
55	May 2015	$2.5170	$2.4500	$2.2700	$2.5200	$2.1900	$2.7100	$2.7300	$2.7400
56	Jun 2015	$2.8150	$2.7700	$2.5700	$2.8600	$2.5500	$2.8800	$2.9100	$2.9500
57	Jul 2015	$2.7730	$2.7200	$2.5300	$2.8200	$2.5500	$2.8500	$2.8500	$2.8500
58	Aug 2015	$2.8860	$2.8400	$2.6400	$2.8900	$2.6500	$2.9300	$2.9600	$3.0000
59	Sep 2015	$2.6380	$2.5900	$2.4200	$2.7800	$2.3700	$2.8500	$2.8600	$2.9000
60	Oct 2015	$2.5630	$2.4900	$2.3600	$2.7000	$2.3800	$2.7900	$2.8600	$2.8900

HISTORICAL BASIS DIFFERENTIAL (IF FOM MINUS FUTURES)

mm/yy	ANR LA	ANR OK	CHICAGO	PEPL	ANR ML7	MICHCON	CONSUMERS
Nov 2010	-0.0420	-0.2620	0.1480	-0.2620	0.2080	0.2080	0.0880
Dec 2010	-0.0470	-0.1770	0.2430	-0.1670	0.2830	0.2530	0.1830
Jan 2011	-0.0260	-0.2460	0.1840	-0.2860	0.3340	0.1840	0.2340
Feb 2011	-0.0560	-0.0660	0.3140	-0.0860	0.2540	0.2040	0.1940
Mar 2011	-0.0530	-0.1530	0.1570	-0.1630	0.2970	0.2370	0.1970
Apr 2011	-0.0400	-0.1100	0.1600	-0.1200	0.2080	0.3200	0.2200
May 2011	-0.0470	-0.2370	0.1130	-0.2570	0.2630	0.2730	0.2130
Jun 2011	-0.0560	-0.1160	0.0540	-0.2060	0.1340	0.2540	0.2340
Jul 2011	-0.0470	-0.1370	0.0230	-0.2170	0.2030	0.1430	0.1930
Aug 2011	-0.0600	-0.1200	0.1200	-0.1500	0.1900	0.1800	0.1700
Sep 2011	-0.0470	-0.0670	0.1030	-0.1170	0.1930	0.2430	0.1930
Oct 2011	-0.0690	-0.0890	0.1610	-0.0990	0.2310	0.2410	0.2110
Nov 2011	-0.0740	-0.1040	0.3060	-0.1140	0.2860	0.3160	0.2060
Dec 2011	-0.0640	-0.0340	0.3560	-0.0040	0.3260	0.2560	0.2160
Jan 2012	-0.0840	-0.1140	0.2260	-0.0940	0.2160	0.1860	0.1660
Feb 2012	-0.0580	-0.0880	0.0920	-0.1280	0.2020	0.1820	0.1720
Mar 2012	-0.0460	-0.0860	0.1440	-0.0660	0.2740	0.1740	0.1440
Apr 2012	-0.1110	-0.2310	-0.0310	-0.2410	0.0490	0.1390	0.1190
May 2012	-0.0460	-0.1860	0.0540	-0.1660	0.1940	0.1340	0.1540
Jun 2012	-0.0690	-0.0390	0.1610	-0.0190	0.2110	0.1110	0.0910
Jul 2012	-0.0940	-0.1740	0.0160	-0.1540	0.0360	0.0260	0.0460
Aug 2012	-0.0600	-0.0700	0.1600	-0.0700	0.1100	0.1600	0.1000
Sep 2012	-0.0840	-0.1940	0.1260	-0.1940	0.1660	0.1360	0.1160
Oct 2012	-0.0730	-0.3130	0.1370	-0.2630	0.1370	0.1570	0.1370
Nov 2012	-0.0710	-0.1710	0.2090	-0.1810	0.2890	0.2490	0.2150
Dec 2012	-0.0660	-0.1160	0.2440	-0.1260	0.2440	0.2440	0.2140
Jan 2013	-0.0440	-0.0940	0.1660	-0.1240	0.2060	0.1660	0.1960
Feb 2013	-0.0460	-0.0160	0.2040	-0.0160	0.2840	0.1740	0.1940
Mar 2013	-0.0470	-0.1970	0.1230	-0.2070	0.1230	0.1430	0.1330
Apr 2013	-0.0260	-0.1560	0.1940	-0.1660	0.2140	0.2140	0.2440
May 2013	-0.0420	-0.1620	0.1780	-0.1620	0.1980	0.2480	0.2980
Jun 2013	-0.0780	-0.1280	0.1020	-0.2080	0.2520	0.2620	0.2720
Jul 2013	-0.0770	-0.2070	0.0430	-0.2770	0.1130	0.1730	0.2230
Aug 2013	-0.0790	-0.0690	0.1610	-0.1490	0.1310	0.2510	0.2610
Sep 2013	-0.0870	-0.2070	0.0630	-0.2670	0.1230	0.2030	0.2430
Oct 2013	-0.0780	-0.1580	0.1420	-0.2480	0.1720	0.1920	0.2220
Nov 2013	-0.0760	-0.0360	0.2540	-0.1060	0.2140	0.1640	0.1840
Dec 2013	-0.0880	-0.2680	0.0820	-0.3380	0.1120	0.0720	0.1220
Jan 2014	-0.0870	-0.0770	0.4230	-0.1370	0.3530	0.2730	0.3230
Feb 2014	-0.0770	-0.4070	2.5630	-0.2670	2.5730	1.3630	2.6430
Mar 2014	-0.0950	0.3950	6.0850	0.3150	5.2450	6.5050	6.7750
Apr 2014	-0.0540	-0.2140	0.3960	-0.2840	0.7460	0.6160	0.6960
May 2014	-0.0750	-0.3450	0.0550	-0.4850	0.0350	0.1450	0.1650
Jun 2014	-0.0790	-0.4090	0.0310	-0.4590	0.0810	0.2210	0.2110
Jul 2014	0.1400	-0.1900	0.2500	-0.2400	0.3000	0.4400	0.4300
Aug 2014	-0.0680	-0.1880	0.0620	-0.2380	0.1620	0.1320	0.1520
Sep 2014	-0.0470	-0.1670	0.0530	-0.2170	0.0930	0.0930	0.1030
Oct 2014	-0.0540	-0.2340	0.0860	-0.2440	0.1060	0.0560	0.0960
Nov 2014	-0.0780	-0.2880	0.0220	-0.2880	0.1520	0.1320	0.1320
Dec 2014	-0.0920	0.0680	0.8880	-0.0620	0.8980	0.5880	0.6580
Jan 2015	-0.0790	-0.0190	0.4210	-0.1190	0.3810	0.2410	0.3610
Feb 2015	-0.0560	-0.1160	0.1540	-0.2460	0.1940	0.0940	0.1740
Mar 2015	-0.0340	-0.2140	0.7760	-0.2740	0.9260	0.5760	0.7560
Apr 2015	-0.0700	-0.2400	0.0600	-0.3400	0.1900	0.1200	0.1700
May 2015	-0.0670	-0.2470	0.0030	-0.3270	0.1930	0.2130	0.2230
Jun 2015	-0.0450	-0.2450	0.0450	-0.2650	0.0650	0.0950	0.1350
Jul 2015	-0.0530	-0.2430	0.0470	-0.2230	0.0770	0.0770	0.0770
Aug 2015	-0.0460	-0.2460	0.0040	-0.2360	0.0440	0.0740	0.1140
Sep 2015	-0.0480	-0.2180	0.1420	-0.2680	0.2120	0.2220	0.2620
Oct 2015	-0.0730	-0.2030	0.1370	-0.1830	0.2270	0.2970	0.3270

Forecasted Basis	ANR LA	ANR OK	Chicago	PEPL	ANR ML7	MichCon	Consumers
Winter Basis	-0.0850	-0.1110	0.0745	-0.2145	0.1149	0.0770	0.1000
Summer Basis	-0.0725	-0.2200	-0.1007	-0.2846	-0.0662	-0.0243	0.0376
Year-Round Basis	-0.0777	-0.1746	-0.0277	-0.2554	0.0092	0.0179	0.0636
	SE	SW					

All BTU at 14.65 psig unless noted

		2014		*2015*										
Line	*PIPELINE & NOTES*	November	December	January	February	March	April	May	June	July	August	September	October	**AVG BTU**
1	**PEPL Reg. Avg.**	1,023.6	1,033.1	1,033.3	1,032.6	1,040.0	1,051.3	1,034.6	1,034.1	1,035.0	1,035.0	1,048.5	1,044.7	1,037.2
2	**ANR Reg. Avg. Group 1**	1,042.3	1,048.3	1,041.9	1,037.1	1,041.8	1,041.5	1,048.5	1,059.5	1,054.1	1,050.7	1,057.5	1,053.7	1,048.1
3	**ANR Reg. Avg. Group 2**	1,035.3	1,040.6	1,038.3	1,030.6	1,038.5	1,043.8	1,047.7	1,062.2	1,062.0	1,063.7	1,061.8	1,064.1	1,049.1
4	**ANR Reg. Avg. Group 3**	1,035.9	1,037.3	1,034.5	1,030.8	1,039.6	1,047.7	1,049.2	1,060.0	1,057.4	1,062.6	1,062.4	1,065.5	1,048.6
5	**ANR TOTAL AVERAGE**	1,037.8	1,042.0	1,038.2	1,032.8	1,039.9	1,044.4	1,048.5	1,060.6	1,057.8	1,059.0	1,060.6	1,061.1	1,048.6
6	**MichCon Avg. 14.65 (NGH)**	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	
7	**Consumers Power Avg.**	1,025.6	1,020.9	1,032.2	1,012.9	1,009.3	1,021.7	Note 1	Note 1	1,020.3	1,001.6	1,026.0	1,024.4	1,019.5
8	**PIPELINE AVERAGE**	1,032.5	1,036.0	1,036.0	1,028.8	1,033.8	1,041.2	1,045.0	1,054.0	1,045.7	1,042.7	1,051.2	1,050.5	1,040.5

Note 1: No Flow, therefore no Btu Available.

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION

Case No. U-17940
Exhibit A-6 (SRM-6)
Witness: Sarah R. Mead

SUMMARY OF 2016 - 2021 SOURCES OF SUPPLY
Mcf @ 14.65 Dry

Line	Source of Supply	2016-17	2017-18	2018-19	2019-20	2020-21
1	ANR ETS - Southeast	4,337,819	4,490,855	4,429,221	4,364,799	4,493,647
2	ANR ETS - Southwest	1,834,299	1,834,299	1,834,299	1,841,011	1,834,299
3	ANR FTS - Chicago	988,679	998,297	1,011,867	1,024,258	940,291
4	ANR ML7	1,780,874	1,705,738	1,707,354	1,678,231	1,627,884
5	Panhandle EFT	6,636,542	6,632,175	6,637,527	6,718,127	6,635,129
6	Panhandle Market Zone EFT	0	0	0	0	0
7	MichCon	755,000	755,000	755,000	760,000	755,000
8	Consumers Power	0	0	0	0	0
9	Other	0	0	0	0	0
10	Production	60,225	60,225	60,225	60,225	60,225
11	Total Suppliers	16,393,438	16,476,589	16,435,493	16,446,651	16,346,475
	Storage Injections					
12	ANR	3,376,381	3,273,774	3,327,470	3,389,750	3,305,377
13	MichCon Wash 10	0	0	0	0	0
14	MGU	2,033,453	2,098,487	2,096,244	2,037,644	2,088,960
15	Total Storage Injections	5,409,834	5,372,261	5,423,714	5,427,394	5,394,337
	Storage Withdrawals					
16	ANR	3,376,382	3,273,775	3,327,469	3,389,751	3,305,377
17	MichCon Wash 10	0	0	0	0	0
18	MGU	2,033,453	2,098,487	2,096,244	2,037,644	2,088,960
19	Total Storage Withdrawals	5,409,835	5,372,262	5,423,713	5,427,395	5,394,337
20	Total GCR Supply	16,393,439	16,476,590	16,435,492	16,446,652	16,346,475

SUMMARY OF COST OF GAS

Line	Description	2016-17	2017-18	2018-19	2019-20	2020-21
	Commodity Cost					
1	ANR ETS - Southeast	$11,308,558	$11,658,605	$12,019,153	$12,390,517	$12,773,023
2	ANR ETS - Southwest	$4,828,990	$4,984,293	$5,144,256	$5,309,018	$5,478,723
3	ANR FTS - Chicago	$2,487,574	$2,563,068	$2,640,827	$2,720,918	$2,803,412
4	ANR ML7	$4,407,221	$4,538,925	$4,674,580	$4,814,304	$4,958,221
5	Panhandle EFT	$16,836,075	$17,395,788	$17,972,293	$18,566,093	$19,177,707
6	Panhandle Market Zone EFT	$0	$0	$0	$0	$0
7	MichCon	$2,109,921	$2,172,808	$2,237,583	$2,304,301	$2,373,020
8	Consumers Power	$0	$0	$0	$0	$0
9	Union	$0	$0	$0	$0	$0
10	Production	$142,777	$147,389	$152,140	$157,033	$162,073
11	Daily Scheduling Charges	$0	$0	$0	$0	$0
12	Other Commodity Charges	$1,045,018	$1,042,114	$1,043,636	$1,045,471	$1,042,885
13	Total Suppliers	$43,166,134	$44,502,990	$45,884,468	$47,307,655	$48,769,064
	Pipeline Demand/Supply Reservation Costs					
14	ANR Enhanced Transportation Service (ETS)	$1,780,254	$1,780,254	$1,780,254	$1,780,254	$1,780,254
15	ANR Firm Transportation Service (FTS)	$264,000	$264,000	$264,000	$264,000	$264,000
16	PEPL Enhanced Firm Transportation (EFT)	$4,465,530	$4,465,530	$4,465,530	$4,465,530	$4,465,530
17	MichCon Transport (FT)	$75,665	$75,665	$75,665	$75,665	$75,665
18	MichCon Washington 10 Storage Service	$0	$0	$0	$0	$0
19	ANR No-Notice Service (NNS)	$931,335	$931,335	$931,335	$931,335	$931,335
20	ANR Firm Storage Service (FSS)	$3,508,620	$3,508,620	$3,508,620	$3,508,620	$3,508,620
21	ANR ETS Between MGU & ANR FSS	$2,105,488	$2,105,488	$2,105,488	$2,105,488	$2,105,488
22	Monthly Fixed Charges	$137,050	$137,050	$137,050	$137,050	$137,050
23	Total Demand	$13,267,943	$13,267,943	$13,267,943	$13,267,943	$13,267,943
24	Total Purchased and Produced	$56,434,076	$57,770,932	$59,152,411	$60,575,598	$62,037,007
25	Net (To)/From Storage	$639,550	$601,795	$573,414	$537,686	$487,478
26	Total Cost of Gas	$57,073,627	$58,372,727	$59,725,825	$61,113,284	$62,524,485
27	2015-16 Projected (Over) Recovery	$ (606,157)				
28	Total Projected GCR Costs	$56,467,470	$58,372,727	$59,725,825	$61,113,284	$62,524,485
29	Total GCR Supply	16,393,439	16,476,590	16,435,492	16,446,652	16,346,475

LOCAL PRODUCTION

Line		April	May	June	July	August	September	October	November	December	January	February	March	Total
	Volumes													
1	2016-17	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
2	2017-18	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
3	2018-19	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
4	2019-20	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
5	2020-21	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
	Price (1)													
6	2016-17	$2.1209	$2.1681	$2.2151	$2.2631	$2.2815	$2.2823	$2.3029	$2.3829	$2.5419	$2.6497	$2.6455	$2.6059	
7	2017-18	$2.1900	$2.2386	$2.2870	$2.3365	$2.3554	$2.3562	$2.3775	$2.4599	$2.6236	$2.7347	$2.7303	$2.6895	
8	2018-19	$2.2612	$2.3112	$2.3611	$2.4120	$2.4315	$2.4324	$2.4542	$2.5391	$2.7078	$2.8222	$2.8177	$2.7757	
9	2019-20	$2.3345	$2.3860	$2.4374	$2.4898	$2.5099	$2.5108	$2.5333	$2.6207	$2.7945	$2.9123	$2.9077	$2.8644	
10	2020-21	$2.4099	$2.4631	$2.5160	$2.5700	$2.5907	$2.5916	$2.6148	$2.7048	$2.8838	$3.0051	$3.0004	$2.9558	
	Cost (2)													
11	2016-17	$10,498	$11,090	$10,965	$11,576	$11,670	$11,297	$11,779	$11,795	$13,002	$13,553	$12,222	$13,329	$142,777
12	2017-18	$10,840	$11,450	$11,321	$11,951	$12,048	$11,663	$12,161	$12,176	$13,420	$13,988	$12,614	$13,757	$147,389
13	2018-19	$11,193	$11,822	$11,687	$12,337	$12,437	$12,040	$12,553	$12,569	$13,850	$14,435	$13,018	$14,198	$152,140
14	2019-20	$11,556	$12,205	$12,065	$12,736	$12,838	$12,429	$12,958	$12,973	$14,294	$14,896	$13,434	$14,652	$157,033
15	2020-21	$11,929	$12,599	$12,454	$13,146	$13,251	$12,828	$13,375	$13,389	$14,751	$15,371	$13,862	$15,119	$162,073

(1) This gas is priced at MichCon first of month index less $0.20

(2) The cost includes severance and oil and gas taxes

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - Volume (mcf @ 14.65)
2016-17

Case No. U-17940
Exhibit A-7 (SRM-7) Page 3 of 22
Witness: Sarah R. Mead

Line	Sources	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	TOTAL
	SOURCE OF SUPPLY													
1	ANR ETS	1,350,747	1,242,477	833,242	847,132	825,049	893,541	676,091	290,978	523,964	540,084	481,980	436,387	8,941,672
2	ANR ETS SW	115,063	118,899	115,063	118,899	118,899	115,063	118,899	201,361	208,073	208,073	187,937	208,073	1,834,299
3	ANR ETS SE	431,487	445,870	431,487	445,870	445,870	431,487	445,870	89,617	315,891	332,011	294,043	228,314	4,337,819
4	ANR FTS CHI	143,829	148,623	143,829	148,623	148,623	143,829	111,322	0	0	0	0	0	988,679
5	ANR ML7	660,368	529,085	142,863	133,740	111,657	203,162	0	0	0	0	0	0	1,780,874
6	PEPL EFT	407,160	420,732	407,160	420,732	420,732	407,160	321,604	479,609	810,130	893,991	838,098	809,434	6,636,542
7	TKLN FT	0	0	0	0	0	0	0	0	0	0	0	0	0
8	MICH CON	0	0	0	0	0	0	0	150,000	155,000	155,000	140,000	155,000	755,000
9	CONSUMERS POWER	0	0	0	0	0	0	0	0	0	0	0	0	0
10	PRODUCTION	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
11	OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0
12	TOTAL GCR PURCHASES	1,762,857	1,668,324	1,245,352	1,272,979	1,250,896	1,305,651	1,002,810	925,537	1,494,209	1,594,190	1,464,698	1,405,936	16,393,438
	STORAGE INJECTIONS	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	TOTAL
13	ANR	276,753	571,955	553,505	571,955	571,955	553,505	276,753	0	0	0	0	0	3,376,381
14	MGU	181,485	375,069	362,970	375,069	375,069	363,791	0	0	0	0	0	0	2,033,453
15														
16	TOTAL INJECTED	458,238	947,024	916,475	947,024	947,024	917,296	276,753	0	0	0	0	0	5,409,834
	STORAGE WITHDRAWALS	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	TOTAL
17	ANR	126,782	0	0	0	0	0	70,800	305,596	699,421	859,615	714,655	599,513	3,376,382
18	MGU	0	0	0	0	0	0	100,000	250,334	449,751	455,269	391,255	386,844	2,033,453
19														
20	TOTAL WITHDRAWALS	126,782	0	0	0	0	0	170,800	555,930	1,149,172	1,314,884	1,105,910	986,357	5,409,835
21	TOTAL GCR SUPPLY	1,431,401	721,300	328,877	325,955	303,872	388,355	896,857	1,481,467	2,643,381	2,909,074	2,570,608	2,392,293	16,393,439
22	ACCUMULATIVE	1,431,401	2,152,701	2,481,578	2,807,533	3,111,405	3,499,760	4,396,617	5,878,084	8,521,465	11,430,539	14,001,147	16,393,440	

Line	TOTAL MGU Sources	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	TOTAL
	Gas Commodity Charge													
1	ANR ETS													
2	ANR ETS SW	$ 265,956	$ 280,916	$ 277,727	$ 293,183	$ 295,558	$ 286,124	$ 298,322	$ 522,716	$ 576,068	$ 600,426	$ 541,464	$ 590,529	$ 4,828,990
3	ANR ETS SE	$ 1,024,617	$ 1,081,228	$ 1,067,991	$ 1,126,428	$ 1,135,183	$ 1,098,932	$ 1,145,364	$ 237,862	$ 892,035	$ 975,749	$ 862,847	$ 660,322	$ 11,308,558
4	ANR FTS CHI	$ 345,152	$ 364,055	$ 359,441	$ 378,947	$ 381,831	$ 369,635	$ 288,513	$ -	$ -	$ -	$ -	$ -	$ 2,487,574
5	ANR ML7	$1,592,414	$1,301,883	$358,535	$342,335	$287,952	$524,102	$0	$0	$0	$0	$0	$0	$ 4,407,221
6	Total	$ 3,228,139	$ 3,028,082	$ 2,063,694	$ 2,140,893	$ 2,100,524	$ 2,278,794	$ 1,732,199	$ 760,578	$ 1,468,103	$ 1,576,175	$ 1,404,310	$ 1,250,851	$ 23,032,343
7	PEPL EFT	$ 895,709	$ 946,901	$ 936,916	$ 989,844	$ 998,161	$ 966,312	$ 770,380	$ 1,190,093	$ 2,148,632	$ 2,474,589	$ 2,316,094	$ 2,202,443	$ 16,836,075
7	MICH CON	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 391,612	$ 429,576	$ 446,465	$ 402,665	$ 439,603	$ 2,109,921
9	CONSUMERS POWER	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -
10	PRODUCTION	$ 10,498	$ 11,090	$ 10,965	$ 11,576	$ 11,670	$ 11,297	$ 11,779	$ 11,795	$ 13,002	$ 13,553	$ 12,222	$ 13,329	$ 142,777
11	OTHER - Unrealize Hedge (Gain)Loss	$108,406	$99,610	$88,766	$73,290	$54,812	$36,666	$22,810	$9,510	$4,100	$0	$0	$0	$ 497,970
12	TOTAL GAS GCR PURCHASES	$ 4,242,752	$ 4,085,683	$ 3,100,341	$ 3,215,602	$ 3,165,167	$ 3,293,069	$ 2,537,169	$ 2,363,588	$ 4,063,413	$ 4,510,783	$ 4,135,291	$ 3,906,227	$ 42,619,085
	Transportation Commodity Charges													
	ANR ETS													
13	ANR ETS SW	$ 1,848	$ 1,910	$ 1,848	$ 1,910	$ 1,910	$ 1,848	$ 1,910	$ 3,234	$ 3,342	$ 3,342	$ 3,018	$ 3,342	$ 29,460
14	ANR ETS SE	$ 6,030	$ 6,231	$ 6,030	$ 6,231	$ 6,231	$ 6,030	$ 6,231	$ 1,252	$ 4,415	$ 4,640	$ 4,109	$ 3,191	$ 60,621
15	ANR FTS CHI	$ 1,485	$ 1,535	$ 1,485	$ 1,535	$ 1,535	$ 1,485	$ 1,149	$ -	$ -	$ -	$ -	$ -	$ 10,208
16	ANR Sto to Gate	$ 723	$ -	$ -	$ -	$ -	$ -	$ 404	$ 1,743	$ 3,988	$ 4,902	$ 4,075	$ 3,419	$ 19,253
17	Total	$ 10,086	$ 9,675	$ 9,363	$ 9,675	$ 9,675	$ 9,363	$ 9,694	$ 6,229	$ 11,745	$ 12,883	$ 11,203	$ 9,951	$ 119,541
18	PEPL EFT	$ 18,985	$ 19,618	$ 18,985	$ 19,618	$ 19,618	$ 18,985	$ 14,996	$ 22,363	$ 37,775	$ 41,685	$ 39,079	$ 37,742	$ 309,448
19	CONSUMERS POWER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
20	OTHER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
21	TOTAL TRANS CHARGES	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990
22	TOTAL GAS COMMODITY CHARGES	$ 4,271,823	$ 4,114,976	$ 3,128,689	$ 3,244,895	$ 3,194,460	$ 3,321,418	$ 2,561,858	$ 2,392,180	$ 4,112,933	$ 4,565,351	$ 4,185,573	$ 3,953,920	$ 43,048,075

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
Supply Prices ($ per Mcf @ 14.65 dry) and Cost of Gas
2016-17

Case No. U-17940
Exhibit A-7 (SRM-7) Page 5 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
	City Gate Commodity Cost													
1	Supplier Commodity Cost	$ 4,242,752	$ 4,085,683	$ 3,100,341	$ 3,215,602	$ 3,165,167	$ 3,293,069	$ 2,537,169	$ 2,363,588	$ 4,063,413	$ 4,510,783	$ 4,135,291	$ 3,906,227	$ 42,619,085
2	Transportation Commodity Cost	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990
3	Storage Commodity Charges	$ 6,052	$ 8,936	$ 8,648	$ 8,936	$ 8,936	$ 8,648	$ 5,289	$ 4,166	$ 9,534	$ 11,718	$ 9,742	$ 8,172	$ 98,779
4	NNS Charges	$ 2,073	$ 1,962	$ 1,465	$ 1,497	$ 1,471	$ 1,535	$ 1,179	$ 1,088	$ 1,757	$ 1,875	$ 1,722	$ 1,653	$ 19,279
5	Total	$ 4,279,949	$ 4,125,875	$ 3,138,801	$ 3,255,328	$ 3,204,867	$ 3,331,601	$ 2,568,326	$ 2,397,434	$ 4,124,224	$ 4,578,944	$ 4,197,037	$ 3,963,746	$ 43,166,133
	Pipeline Demand/Supply/Reservation Costs													
6	ANR Enhanced Transportation Service (ET	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$165,869	$165,869	$165,869	$165,869	$165,869	$1,780,254
7	ANR Firm Transportation Service (FTS)	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$ 264,000
8	ANR No-Notice Service (NNS)	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$96,345	$96,345	$96,345	$96,345	$96,345	$ 931,335
9	ANR Firm Storage Service (FSS)	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$ 3,508,620
10	ANR ETS Between MGU & ANR FSS	$165,264	$0	$0	$0	$0	$0	$0	$388,045	$388,045	$388,045	$388,045	$388,045	$ 2,105,488
11	PEPL Enhanced Firm Transportation (EFT)	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$630,270	$630,270	$630,270	$630,270	$630,270	$ 4,465,530
12	MichCon Transport (FT)	$0	$0	$0	$0	$0	$0	$0	$15,133	$15,133	$15,133	$15,133	$15,133	$ 75,665
13	MichCon Washington 10 Storage Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -
14	Monthly Fixed Charges	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 137,050
15	Total	$870,280	$705,016	$705,016	$705,016	$705,016	$705,016	$705,016	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$13,267,943
16	Total Purchased and Produced (Line 5 + 15	$5,150,228	$4,830,890	$3,843,817	$3,960,344	$3,909,883	$4,036,617	$3,273,342	$4,030,948	$5,757,738	$6,212,457	$5,830,551	$5,597,260	$ 56,434,076
17	Cost/Mcf of Purchased and Produced	$2.9215	$2.8957	$3.0865	$3.1111	$3.1257	$3.0917	$3.2642	$4.3553	$3.8534	$3.8969	$3.9807	$3.9812	$3.4425

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - **Storage**
2016-17

Case No. U-17940
Exhibit A-7 (SRM-7) Page 6 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
		30	31	30	31	31	30	31	30	31	31	28	31	
	ANR													
1	Beginning working gas - Mcf	296,788	446,759	1,018,714	1,572,219	2,144,174	2,716,129	3,269,634	3,475,587	3,169,991	2,470,570	1,610,955	896,300	
2	+ Injections	(276,753)	(571,955)	(553,505)	(571,955)	(571,955)	(553,505)	(276,753)	0	0	0	0	0	(3,376,381)
3	-Withdrawals	126,782	0	0	0	0	0	70,800	305,596	699,421	859,615	714,655	599,513	3,376,382
4	Ending working gas - Mcf	446,759	1,018,714	1,572,219	2,144,174	2,716,129	3,269,634	3,475,587	3,169,991	2,470,570	1,610,955	896,300	296,787	
5	Beginning working gas - Cost	$1,163,884	$1,330,024	$2,728,408	$4,105,496	$5,557,487	$7,020,356	$8,437,757	$8,967,914	$8,179,397	$6,374,710	$4,156,681	$2,312,686	
6	+ Cost of Gas Injected	$663,328	$1,398,384	$1,377,088	$1,451,991	$1,462,869	$1,417,401	$712,866	$0	$0	$0	$0	$0	$8,483,928
7	- Cost of Withdrawals	($497,188)	$0	$0	$0	$0	$0	($182,710)	($788,517)	($1,804,687)	($2,218,029)	($1,843,995)	($1,546,899)	($8,882,024)
8	Ending working gas Cost	$1,330,024	$2,728,408	$4,105,496	$5,557,487	$7,020,356	$8,437,757	$8,967,914	$8,179,397	$6,374,710	$4,156,681	$2,312,686	$765,787	
9	Ending working gas Avg. Cost per Mc	$2.98	$2.68	$2.61	$2.59	$2.58	$2.58	$2.58	$2.58	$2.58	$2.58	$2.58	$2.58	
	Washington 10													
10	Beginning working gas - Mcf	0	0	0	0	0	0	0	0	0	0	0	0	
11	+ Injections	0	0	0	0	0	0	0	0	0	0	0	0	0
12	-Withdrawals	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Ending working gas - Mcf	0	0	0	0	0	0	0	0	0	0	0	0	
14	Beginning working gas - Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
15	+ Cost of Gas Injected	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Ending working gas Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
18	Ending working gas Avg. Cost per Mc	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	MGU													
19	Beginning working gas - Mcf	136,988	318,473	693,542	1,056,512	1,431,581	1,806,650	2,170,441	2,070,441	1,820,107	1,370,356	915,087	523,832	
20	+ Injections	(181,485)	(375,069)	(362,970)	(375,069)	(375,069)	(363,791)	0	0	0	0	0	0	(2,033,453)
21	-Withdrawals	0	0	0	0	0	0	100,000	250,334	449,751	455,269	391,255	386,844	2,033,453
22	Ending working gas - Mcf	318,473	693,542	1,056,512	1,431,581	1,806,650	2,170,441	2,070,441	1,820,107	1,370,356	915,087	523,832	136,988	
23	Beginning working gas - Cost	$581,692	$989,402	$1,851,023	$2,703,178	$3,603,080	$4,510,397	$5,390,745	$5,142,374	$4,520,617	$3,403,566	$2,272,810	$1,301,047	
24	+ Cost of Gas Injected	$407,710	$861,621	$852,155	$899,902	$907,317	$880,347	$0	$0	$0	$0	$0	$0	$4,809,053
25	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	($248,371)	($621,757)	($1,117,051)	($1,130,756)	($971,764)	($960,808)	($5,050,507)
26	Ending working gas Cost	$989,402	$1,851,023	$2,703,178	$3,603,080	$4,510,397	$5,390,745	$5,142,374	$4,520,617	$3,403,566	$2,272,810	$1,301,047	$340,238	
27	Ending working gas Avg. Cost per Mc	$3.11	$2.67	$2.56	$2.52	$2.50	$2.48	$2.48	$2.48	$2.48	$2.48	$2.48	$2.48	
28	Net To/(From) Storage	$573,850	$2,260,005	$2,229,243	$2,351,893	$2,370,186	$2,297,749	$281,786	($1,410,274)	($2,921,738)	($3,348,785)	($2,815,759)	($2,507,707)	($639,550)
	Total													
29	Ending working gas - Mcf	765,232	1,712,256	2,628,731	3,575,755	4,522,779	5,440,075	5,546,028	4,990,098	3,840,926	2,526,042	1,420,132	433,775	37,401,829
30	Ending working gas Cost	$2,319,426	$4,579,431	$6,808,674	$9,160,567	$11,530,753	$13,828,502	$14,110,288	$12,700,014	$9,778,276	$6,429,491	$3,613,732	$1,106,026	$95,965,181
31	Ending working gas Avg. Cost per Mc	$3.03	$2.67	$2.59	$2.56	$2.55	$2.54	$2.54	$2.55	$2.55	$2.55	$2.54	$2.55	$2.57

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - Volume (mcf @ 14.65)
2017-18

Case No. U-17940
Exhibit A-7 (SRM-7) Page 7 of 22
Witness: Sarah R. Mead

Line	Sources	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	TOTAL
	SOURCE OF SUPPLY													
1	ANR ETS	1,319,807	1,211,568	821,393	840,584	821,940	901,760	685,709	325,836	532,403	568,468	483,685	516,037	9,029,190
2	ANR ETS SW	115,063	118,899	115,063	118,899	118,899	115,063	118,899	201,361	208,073	208,073	187,937	208,073	1,834,299
3	ANR ETS SE	431,487	445,870	431,487	445,870	445,870	431,487	445,870	124,475	324,330	360,395	295,748	307,964	4,490,855
4	ANR FTS CHI	143,829	148,623	143,829	148,623	148,623	143,829	120,940	0	0	0	0	0	998,297
5	ANR ML7	629,428	498,176	131,014	127,192	108,548	211,381	0	0	0	0	0	0	1,705,738
6	PEPL EFT	407,160	420,732	407,160	420,732	420,732	407,160	292,740	500,279	822,117	900,969	840,412	791,982	6,632,175
7	TKLN FT	0	0	0	0	0	0	0	0	0	0	0	0	0
8	MICH CON	0	0	0	0	0	0	0	150,000	155,000	155,000	140,000	155,000	755,000
9	CONSUMERS POWER	0	0	0	0	0	0	0	0	0	0	0	0	0
10	PRODUCTION	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
11	OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0
12	TOTAL GCR PURCHASES	1,731,917	1,637,415	1,233,503	1,266,431	1,247,787	1,313,870	983,564	981,065	1,514,635	1,629,552	1,468,717	1,468,134	16,476,589
	STORAGE INJECTIONS	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	TOTAL
13	ANR	268,342	554,574	536,684	554,574	554,574	536,684	268,342	0	0	0	0	0	3,273,774
14	MGU	198,640	384,865	372,450	384,865	384,865	372,802	0	0	0	0	0	0	2,098,487
15	Washington 10	0	0	0	0	0	0	0	0	0	0	0	0	0
16	TOTAL INJECTED	466,982	939,439	909,134	939,439	939,439	909,486	268,342	0	0	0	0	0	5,372,261
	STORAGE WITHDRAWALS	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	TOTAL
17	ANR	123,000	0	0	0	0	0	76,800	302,702	712,909	845,026	717,939	495,399	3,273,775
18	MGU	0	0	0	0	0	0	150,000	260,790	456,764	459,440	392,730	378,763	2,098,487
19	Washington 10	0	0	0	0	0	0	0	0	0	0	0	0	0
20	TOTAL WITHDRAWALS	123,000	0	0	0	0	0	226,800	563,492	1,169,673	1,304,466	1,110,669	874,162	5,372,262
21	TOTAL GCR SUPPLY	1,387,935	697,976	324,369	326,992	308,348	404,384	942,022	1,544,557	2,684,308	2,934,018	2,579,386	2,342,296	16,476,590
22	ACCUMULATIVE	1,387,935	2,085,911	2,410,280	2,737,272	3,045,620	3,450,004	4,392,026	5,936,583	8,620,891	11,554,909	14,134,295	16,476,591	

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - Cost
2017-18

Case No. U-17940
Exhibit A-7 (SRM-7) Page 8 of 22
Witness: Sarah R. Mead

Line	TOTAL MGU Sources	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	TOTAL
	Gas Commodity Charge													
1	ANR ETS													
2	ANR ETS SW	$ 274,590	$ 290,020	$ 286,714	$ 302,654	$ 305,102	$ 295,362	$ 307,948	$ 539,543	$ 594,533	$ 619,623	$ 558,776	$ 609,429	$ 4,984,293
3	ANR ETS SE	$ 1,056,429	$ 1,114,774	$ 1,101,104	$ 1,161,330	$ 1,170,347	$ 1,132,973	$ 1,180,834	$ 245,221	$ 919,582	$ 1,005,847	$ 889,463	$ 680,700	$ 11,658,605
4	ANR FTS CHI	$ 355,632	$ 375,107	$ 370,351	$ 390,445	$ 393,416	$ 380,850	$ 297,266	$ -	$ -	$ -	$ -	$ -	$ 2,563,068
5	ANR ML7	$1,639,996	$1,340,787	$369,250	$352,567	$296,558	$539,767	$0	$0	$0	$0	$0	$0	$ 4,538,925
6	Total	$ 3,326,647	$ 3,120,688	$ 2,127,418	$ 2,206,997	$ 2,165,423	$ 2,348,953	$ 1,786,048	$ 784,764	$ 1,514,116	$ 1,625,470	$ 1,448,240	$ 1,290,128	$ 23,744,891
7	PEPL EFT	$ 925,932	$ 978,772	$ 968,375	$ 1,023,003	$ 1,031,569	$ 998,653	$ 796,139	$ 1,229,743	$ 2,219,760	$ 2,556,186	$ 2,392,476	$ 2,275,180	$ 17,395,788
7	MICH CON	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 403,279	$ 442,379	$ 459,775	$ 414,669	$ 452,707	$ 2,172,808
9	CONSUMERS POWER	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -
10	PRODUCTION	$ 10,840	$ 11,450	$ 11,321	$ 11,951	$ 12,048	$ 11,663	$ 12,161	$ 12,176	$ 13,420	$ 13,988	$ 12,614	$ 13,757	$ 147,389
11	OTHER - Unrealize Hedge (Gain)Loss	$108,406	$99,610	$88,766	$73,290	$54,812	$36,666	$22,810	$9,510	$4,100	$0	$0	$0	$ 497,970
12	TOTAL GAS GCR PURCHASES	$ 4,371,825	$ 4,210,520	$ 3,195,879	$ 3,315,240	$ 3,263,852	$ 3,395,936	$ 2,617,158	$ 2,439,472	$ 4,193,775	$ 4,655,419	$ 4,267,999	$ 4,031,772	$ 43,958,847
	Transportation Commodity Charges													
	ANR ETS													
13	ANR ETS SW	$ 1,848	$ 1,910	$ 1,848	$ 1,910	$ 1,910	$ 1,848	$ 1,910	$ 3,234	$ 3,342	$ 3,342	$ 3,018	$ 3,342	$ 29,460
14	ANR ETS SE	$ 6,030	$ 6,231	$ 6,030	$ 6,231	$ 6,231	$ 6,030	$ 6,231	$ 1,252	$ 4,415	$ 4,640	$ 4,109	$ 3,191	$ 60,621
15	ANR FTS CHI	$ 1,485	$ 1,535	$ 1,485	$ 1,535	$ 1,535	$ 1,485	$ 1,149	$ -	$ -	$ -	$ -	$ -	$ 10,208
16	ANR Sto to Gate	$ 723	$ -	$ -	$ -	$ -	$ -	$ 404	$ 1,743	$ 3,988	$ 4,902	$ 4,075	$ 3,419	$ 19,253
17	Total	$ 10,086	$ 9,675	$ 9,363	$ 9,675	$ 9,675	$ 9,363	$ 9,694	$ 6,229	$ 11,745	$ 12,883	$ 11,203	$ 9,951	$ 119,541
18	PEPL EFT	$ 18,985	$ 19,618	$ 18,985	$ 19,618	$ 19,618	$ 18,985	$ 14,996	$ 22,363	$ 37,775	$ 41,685	$ 39,079	$ 37,742	$ 309,448
19	CONSUMERS POWER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
20	OTHER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
21	TOTAL TRANS CHARGES	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990
22	TOTAL GAS COMMODITY CHARGES	$ 4,400,896	$ 4,239,813	$ 3,224,227	$ 3,344,533	$ 3,293,145	$ 3,424,284	$ 2,641,847	$ 2,468,064	$ 4,243,294	$ 4,709,987	$ 4,318,280	$ 4,079,465	$ 44,387,837

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
Supply Prices ($ per Mcf @ 14.65 dry) and Cost of Gas
2017-18

Case No. U-17940
Exhibit A-7 (SRM-7) Page 9 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
	City Gate Commodity Cost													
1	Supplier Commodity Cost	$ 4,371,825	$ 4,210,520	$ 3,195,879	$ 3,315,240	$ 3,263,852	$ 3,395,936	$ 2,617,158	$ 2,439,472	$ 4,193,775	$ 4,655,419	$ 4,267,999	$ 4,031,772	$ 43,958,847
2	Transportation Commodity Cost	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990
3	Storage Commodity Charges	$ 5,869	$ 8,665	$ 8,385	$ 8,665	$ 8,665	$ 8,385	$ 5,240	$ 4,126	$ 9,718	$ 11,519	$ 9,787	$ 6,753	$ 95,777
4	NNS Charges	$ 2,037	$ 1,926	$ 1,451	$ 1,489	$ 1,467	$ 1,545	$ 1,157	$ 1,154	$ 1,781	$ 1,916	$ 1,727	$ 1,727	$ 19,376
5	Total	$ 4,408,802	$ 4,250,404	$ 3,234,063	$ 3,354,687	$ 3,303,277	$ 3,434,214	$ 2,648,243	$ 2,473,345	$ 4,254,793	$ 4,723,422	$ 4,329,794	$ 4,087,945	$ 44,502,990
	Pipeline Demand/Supply/Reservation Costs													
6	ANR Enhanced Transportation Service (ET	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$165,869	$165,869	$165,869	$165,869	$165,869	$ 1,780,254
7	ANR Firm Transportation Service (FTS)	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$ 264,000
8	ANR No-Notice Service (NNS)	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$96,345	$96,345	$96,345	$96,345	$96,345	$ 931,335
9	ANR Firm Storage Service (FSS)	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$ 3,508,620
10	ANR ETS Between MGU & ANR FSS	$165,264	$0	$0	$0	$0	$0	$0	$388,045	$388,045	$388,045	$388,045	$388,045	$ 2,105,488
11	PEPL Enhanced Firm Transportation (EFT)	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$630,270	$630,270	$630,270	$630,270	$630,270	$ 4,465,530
12	MichCon Transport (FT)	$0	$0	$0	$0	$0	$0	$0	$15,133	$15,133	$15,133	$15,133	$15,133	$ 75,665
13	MichCon Washington 10 Storage Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -
14	Monthly Fixed Charges	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 137,050
15	Total	$870,280	$705,016	$705,016	$705,016	$705,016	$705,016	$705,016	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$ 13,267,943
16	Total Purchased and Produced (Line 5 + 15	$5,279,082	$4,955,419	$3,939,079	$4,059,703	$4,008,293	$4,139,230	$3,353,259	$4,106,858	$5,888,307	$6,356,936	$5,963,308	$5,721,459	$ 57,770,933
17	Cost/Mcf of Purchased and Produced	$3.0481	$3.0264	$3.1934	$3.2056	$3.2123	$3.1504	$3.4093	$4.1861	$3.8876	$3.9010	$4.0602	$3.8971	$3.5062

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - **Storage**
2017-18

Case No. U-17940
Exhibit A-7 (SRM-7) Page 10 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
		30	31	30	31	31	30	31	30	31	31	28	31	
	ANR													
1	Beginning working gas - M	296,787	442,129	996,703	1,533,387	2,087,961	2,642,535	3,179,219	3,370,761	3,068,059	2,355,150	1,510,124	792,185	
2	+ Injections	(268,342)	(554,574)	(536,684)	(554,574)	(554,574)	(536,684)	(268,342)	0	0	0	0	0	(3,273,774)
3	-Withdrawals	123,000	0	0	0	0	0	76,800	302,702	712,909	845,026	717,939	495,399	3,273,775
4	Ending working gas - Mcf	442,129	996,703	1,533,387	2,087,961	2,642,535	3,179,219	3,370,761	3,068,059	2,355,150	1,510,124	792,185	296,786	
5	Beginning working gas - C	$1,163,880	$1,359,798	$2,792,667	$4,188,802	$5,651,248	$7,118,816	$8,522,372	$9,019,077	$8,209,143	$6,301,627	$4,040,608	$2,119,633	
6	+ Cost of Gas Injected	$678,275	$1,432,869	$1,396,135	$1,462,446	$1,467,568	$1,403,556	$702,579	$0	$0	$0	$0	$0	$8,543,427
7	- Cost of Withdrawals	($482,357)	$0	$0	$0	$0	$0	($205,874)	($809,934)	($1,907,516)	($2,261,019)	($1,920,975)	($1,325,529)	($8,913,203)
8	Ending working gas Cost	$1,359,798	$2,792,667	$4,188,802	$5,651,248	$7,118,816	$8,522,372	$9,019,077	$8,209,143	$6,301,627	$4,040,608	$2,119,633	$794,104	
9	Ending working gas Avg. (	$3.08	$2.80	$2.73	$2.71	$2.69	$2.68	$2.68	$2.68	$2.68	$2.68	$2.68	$2.68	
	Washington 10													
10	Beginning working gas - M	0	0	0	0	0	0	0	0	0	0	0	0	
11	+ Injections	0	0	0	0	0	0	0	0	0	0	0	0	0
12	-Withdrawals	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Ending working gas - Mcf	0	0	0	0	0	0	0	0	0	0	0	0	
14	Beginning working gas - C	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
15	+ Cost of Gas Injected	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Ending working gas Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
18	Ending working gas Avg. (	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	MGU													
19	Beginning working gas - M	136,988	335,628	720,493	1,092,943	1,477,808	1,862,673	2,235,475	2,085,475	1,824,685	1,367,921	908,481	515,751	
20	+ Injections	(198,640)	(384,865)	(372,450)	(384,865)	(384,865)	(372,802)	0	0	0	0	0	0	(2,098,487)
21	-Withdrawals	0	0	0	0	0	0	150,000	260,790	456,764	459,440	392,730	378,763	2,098,487
22	Ending working gas - Mcf	335,628	720,493	1,092,943	1,477,808	1,862,673	2,235,475	2,085,475	1,824,685	1,367,921	908,481	515,751	136,988	
23	Beginning working gas - C	$581,692	$1,042,686	$1,955,964	$2,859,153	$3,812,891	$4,774,465	$5,706,231	$5,323,344	$4,657,656	$3,491,729	$2,318,971	$1,316,496	
24	+ Cost of Gas Injected	$460,994	$913,278	$903,189	$953,738	$961,574	$931,765	$0	$0	$0	$0	$0	$0	$5,124,539
25	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	($382,887)	($665,688)	($1,165,927)	($1,172,758)	($1,002,475)	($966,823)	($5,356,558)
26	Ending working gas Cost	$1,042,686	$1,955,964	$2,859,153	$3,812,891	$4,774,465	$5,706,231	$5,323,344	$4,657,656	$3,491,729	$2,318,971	$1,316,496	$349,673	
27	Ending working gas Avg. (	$3.11	$2.71	$2.62	$2.58	$2.56	$2.55	$2.55	$2.55	$2.55	$2.55	$2.55	$2.55	
28	Net To/(From) Storage	$656,912	$2,346,147	$2,299,324	$2,416,184	$2,429,143	$2,335,321	$113,818	($1,475,621)	($3,073,443)	($3,433,777)	($2,923,450)	($2,292,352)	($601,795)
	Total													
29	Ending working gas - Mcf	777,757	1,717,196	2,626,330	3,565,769	4,505,208	5,414,694	5,456,236	4,892,744	3,723,071	2,418,605	1,307,936	433,774	36,839,320
30	Ending working gas Cost	$2,402,484	$4,748,631	$7,047,955	$9,464,139	$11,893,281	$14,228,602	$14,342,420	$12,866,799	$9,793,356	$6,359,579	$3,436,129	$1,143,777	$97,727,152
31	Ending working gas Avg. (	$3.09	$2.77	$2.68	$2.65	$2.64	$2.63	$2.63	$2.63	$2.63	$2.63	$2.63	$2.64	$2.65

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - Volume (mcf @ 14.65)
2018-19

Case No. U-17940
Exhibit A-7 (SRM-7) Page 11 of 22
Witness: Sarah R. Mead

Line	Sources	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	TOTAL
	SOURCE OF SUPPLY													
1	ANR ETS	1,292,493	1,201,319	824,750	849,168	832,434	918,504	699,279	338,917	550,420	570,464	484,178	420,816	8,982,742
2	ANR ETS SW	115,063	118,899	115,063	118,899	118,899	115,063	118,899	201,361	208,073	208,073	187,937	208,073	1,834,299
3	ANR ETS SE	431,487	445,870	431,487	445,870	445,870	431,487	445,870	137,556	342,347	362,391	296,241	212,743	4,429,221
4	ANR FTS CHI	143,829	148,623	143,829	148,623	148,623	143,829	134,510	0	0	0	0	0	1,011,867
5	ANR ML7	602,114	487,927	134,371	135,776	119,042	228,125	0	0	0	0	0	0	1,707,354
6	PEPL EFT	407,160	420,732	407,160	420,732	420,732	407,160	302,201	508,207	821,086	903,013	840,416	778,928	6,637,527
7	TKLN FT	0	0	0	0	0	0	0	0	0	0	0	0	0
8	MICH CON	0	0	0	0	0	0	0	150,000	155,000	155,000	140,000	155,000	755,000
9	CONSUMERS POWER	0	0	0	0	0	0	0	0	0	0	0	0	0
10	PRODUCTION	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
11	OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0
12	TOTAL GCR PURCHASES	1,704,603	1,627,166	1,236,860	1,275,015	1,258,281	1,330,614	1,006,595	1,002,074	1,531,621	1,633,592	1,469,214	1,359,859	16,435,494
	STORAGE INJECTIONS	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	TOTAL
13	ANR	272,743	563,670	545,487	563,670	563,670	545,487	272,743	0	0	0	0	0	3,327,470
14	MGU	198,464	384,524	372,120	384,524	384,524	372,088	0	0	0	0	0	0	2,096,244
15	Washington 10	0	0	0	0	0	0	0	0	0	0	0	0	0
16	TOTAL INJECTED	471,207	948,194	917,607	948,194	948,194	917,575	272,743	0	0	0	0	0	5,423,714
	STORAGE WITHDRAWALS	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	TOTAL
17	ANR	119,000	0	0	0	0	0	78,400	300,929	692,639	846,797	717,650	572,054	3,327,469
18	MGU	0	0	0	0	0	0	150,000	264,215	455,954	460,544	392,792	372,739	2,096,244
19	Washington 10	0	0	0	0	0	0	0	0	0	0	0	0	0
20	TOTAL WITHDRAWALS	119,000	0	0	0	0	0	228,400	565,144	1,148,593	1,307,341	1,110,442	944,793	5,423,713
21	TOTAL GCR SUPPLY	1,352,396	678,972	319,253	326,821	310,087	413,039	962,252	1,567,218	2,680,214	2,940,933	2,579,656	2,304,652	16,435,493
22	ACCUMULATIVE	1,352,396	2,031,368	2,350,621	2,677,442	2,987,529	3,400,568	4,362,820	5,930,038	8,610,252	11,551,185	14,130,841	16,435,493	

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - Cost
2018-19

Case No. U-17940
Exhibit A-7 (SRM-7) Page 12 of 22
Witness: Sarah R. Mead

Line	Sources	TOTAL MGU	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	TOTAL
	Gas Commodity Charge														
1	ANR ETS														
2	ANR ETS SW	$ 283,482	$ 299,397	$ 295,969	$ 312,410	$ 314,931	$ 304,878	$ 317,862	$ 556,875	$ 613,553	$ 639,395	$ 576,609	$ 628,895	$ 5,144,256	
3	ANR ETS SE	$ 1,089,195	$ 1,149,326	$ 1,135,210	$ 1,197,279	$ 1,206,567	$ 1,168,036	$ 1,217,369	$ 252,801	$ 947,955	$ 1,036,848	$ 916,879	$ 701,689	$ 12,019,153	
4	ANR FTS CHI	$ 366,427	$ 386,491	$ 381,587	$ 402,289	$ 405,349	$ 392,402	$ 306,281	$ -	$ -	$ -	$ -	$ -	$ 2,640,827	
5	ANR ML7	$1,689,006	$1,380,858	$380,286	$363,105	$305,423	$555,901	$0	$0	$0	$0	$0	$0	$ 4,674,580	
6	Total	$ 3,428,110	$ 3,216,072	$ 2,193,053	$ 2,275,084	$ 2,232,269	$ 2,421,217	$ 1,841,512	$ 809,675	$ 1,561,508	$ 1,676,243	$ 1,493,488	$ 1,330,584	$ 24,478,816	
7	PEPL EFT	$ 957,061	$ 1,011,598	$ 1,000,778	$ 1,057,156	$ 1,065,980	$ 1,031,965	$ 822,670	$ 1,270,584	$ 2,293,022	$ 2,640,231	$ 2,471,149	$ 2,350,098	$ 17,972,293	
7	MICH CON	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 415,296	$ 455,566	$ 473,484	$ 427,033	$ 466,204	$ 2,237,583	
9	CONSUMERS POWER	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -	
10	PRODUCTION	$ 11,193	$ 11,822	$ 11,687	$ 12,337	$ 12,437	$ 12,040	$ 12,553	$ 12,569	$ 13,850	$ 14,435	$ 13,018	$ 14,198	$ 152,140	
11	OTHER - Unrealize Hedge (Gain)Loss	$108,406	$99,610	$88,766	$73,290	$54,812	$36,666	$22,810	$9,510	$4,100	$0	$0	$0	$ 497,970	
12	TOTAL GAS GCR PURCHASES	$ 4,504,770	$ 4,339,102	$ 3,294,284	$ 3,417,867	$ 3,365,498	$ 3,501,888	$ 2,699,546	$ 2,517,633	$ 4,328,047	$ 4,804,394	$ 4,404,687	$ 4,161,084	$ 45,338,802	
	Transportation Commodity Charges														
	ANR ETS														
13	ANR ETS SW	$ 1,848	$ 1,910	$ 1,848	$ 1,910	$ 1,910	$ 1,848	$ 1,910	$ 3,234	$ 3,342	$ 3,342	$ 3,018	$ 3,342	$ 29,460	
14	ANR ETS SE	$ 6,030	$ 6,231	$ 6,030	$ 6,231	$ 6,231	$ 6,030	$ 6,231	$ 1,252	$ 4,415	$ 4,640	$ 4,109	$ 3,191	$ 60,621	
15	ANR FTS CHI	$ 1,485	$ 1,535	$ 1,485	$ 1,535	$ 1,535	$ 1,485	$ 1,149	$ -	$ -	$ -	$ -	$ -	$ 10,208	
16	ANR Sto to Gate	$ 723	$ -	$ -	$ -	$ -	$ -	$ 404	$ 1,743	$ 3,988	$ 4,902	$ 4,075	$ 3,419	$ 19,253	
17	Total	$ 10,086	$ 9,675	$ 9,363	$ 9,675	$ 9,675	$ 9,363	$ 9,694	$ 6,229	$ 11,745	$ 12,883	$ 11,203	$ 9,951	$ 119,541	
18	PEPL EFT	$ 18,985	$ 19,618	$ 18,985	$ 19,618	$ 19,618	$ 18,985	$ 14,996	$ 22,363	$ 37,775	$ 41,685	$ 39,079	$ 37,742	$ 309,448	
19	CONSUMERS POWER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
20	OTHER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
21	TOTAL TRANS CHARGES	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990	
22	TOTAL GAS COMMODITY CHARGES	$ 4,533,841	$ 4,368,395	$ 3,322,632	$ 3,447,160	$ 3,394,791	$ 3,530,236	$ 2,724,236	$ 2,546,225	$ 4,377,566	$ 4,858,962	$ 4,454,969	$ 4,208,777	$ 45,767,791	

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
Supply Prices ($ per Mcf @ 14.65 dry) and Cost of Gas
2018-19

Case No. U-17940
Exhibit A-7 (SRM-7) Page 13 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
	City Gate Commodity Cost													
1	Supplier Commodity Cost	$ 4,504,770	$ 4,339,102	$ 3,294,284	$ 3,417,867	$ 3,365,498	$ 3,501,888	$ 2,699,546	$ 2,517,633	$ 4,328,047	$ 4,804,394	$ 4,404,687	$ 4,161,084	$ 45,338,802
2	Transportation Commodity Cost	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990
3	Storage Commodity Charges	$ 5,884	$ 8,807	$ 8,523	$ 8,807	$ 8,807	$ 8,523	$ 5,330	$ 4,102	$ 9,442	$ 11,543	$ 9,783	$ 7,798	$ 97,348
4	NNS Charges	$ 2,005	$ 1,914	$ 1,455	$ 1,499	$ 1,480	$ 1,565	$ 1,184	$ 1,178	$ 1,801	$ 1,921	$ 1,728	$ 1,599	$ 19,328
5	Total	$ 4,541,729	$ 4,379,116	$ 3,332,610	$ 3,457,466	$ 3,405,078	$ 3,540,324	$ 2,730,750	$ 2,551,506	$ 4,388,809	$ 4,872,426	$ 4,466,480	$ 4,218,174	$ 45,884,468
	Pipeline Demand/Supply/Reservation Costs													
6	ANR Enhanced Transportation Service (ET	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$165,869	$165,869	$165,869	$165,869	$165,869	$ 1,780,254
7	ANR Firm Transportation Service (FTS)	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$ 264,000
8	ANR No-Notice Service (NNS)	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$96,345	$96,345	$96,345	$96,345	$96,345	$ 931,335
9	ANR Firm Storage Service (FSS)	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$ 3,508,620
10	ANR ETS Between MGU & ANR FSS	$165,264	$0	$0	$0	$0	$0	$0	$388,045	$388,045	$388,045	$388,045	$388,045	$ 2,105,488
11	PEPL Enhanced Firm Transportation (EFT)	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$630,270	$630,270	$630,270	$630,270	$630,270	$ 4,465,530
12	MichCon Transport (FT)	$0	$0	$0	$0	$0	$0	$0	$15,133	$15,133	$15,133	$15,133	$15,133	$ 75,665
13	MichCon Washington 10 Storage Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -
14	Monthly Fixed Charges	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 137,050
15	Total	$870,280	$705,016	$705,016	$705,016	$705,016	$705,016	$705,016	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$13,267,943
16	Total Purchased and Produced (Line 5 + 15	$5,412,009	$5,084,132	$4,037,625	$4,162,482	$4,110,094	$4,245,339	$3,435,765	$4,185,020	$6,022,323	$6,505,940	$6,099,993	$5,851,688	$ 59,152,411
17	Cost/Mcf of Purchased and Produced	$3.1749	$3.1245	$3.2644	$3.2647	$3.2664	$3.1905	$3.4133	$4.1764	$3.9320	$3.9826	$4.1519	$4.3032	$3.5991

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - **Storage**
2018-19

Case No. U-17690
Exhibit A-7 (SRM-7) Page 14 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
		30	31	30	31	31	30	31	30	31	31	28	31	
	ANR													
1	Beginning working gas - Mcf	296,786	450,529	1,014,199	1,559,686	2,123,356	2,687,026	3,232,513	3,426,856	3,125,927	2,433,288	1,586,491	868,841	
2	+ Injections	(272,743)	(563,670)	(545,487)	(563,670)	(563,670)	(545,487)	(272,743)	0	0	0	0	0	(3,327,470)
3	-Withdrawals	119,000	0	0	0	0	0	78,400	300,929	692,639	846,797	717,650	572,054	3,327,469
4	Ending working gas - Mcf	450,529	1,014,199	1,559,686	2,123,356	2,687,026	3,232,513	3,426,856	3,125,927	2,433,288	1,586,491	868,841	296,787	
5	Beginning working gas - Cost	$1,163,876	$1,422,584	$2,936,135	$4,392,805	$5,909,407	$7,427,506	$8,870,994	$9,377,718	$8,554,215	$6,658,782	$4,341,491	$2,377,615	
6	+ Cost of Gas Injected	$725,379	$1,513,550	$1,456,671	$1,516,602	$1,518,098	$1,443,488	$721,877	$0	$0	$0	$0	$0	$8,895,666
7	- Cost of Withdrawals	($466,670)	$0	$0	$0	$0	$0	($215,153)	($823,503)	($1,895,432)	($2,317,291)	($1,963,876)	($1,565,447)	($9,247,373)
8	Ending working gas Cost	$1,422,584	$2,936,135	$4,392,805	$5,909,407	$7,427,506	$8,870,994	$9,377,718	$8,554,215	$6,658,782	$4,341,491	$2,377,615	$812,169	
9	Ending working gas Avg. Cost per Mcf	$3.16	$2.90	$2.82	$2.78	$2.76	$2.74	$2.74	$2.74	$2.74	$2.74	$2.74	$2.74	
	Washington 10													
10	Beginning working gas - Mcf	0	0	0	0	0	0	0	0	0	0	0	0	
11	+ Injections	0	0	0	0	0	0	0	0	0	0	0	0	0
12	-Withdrawals	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Ending working gas - Mcf	0	0	0	0	0	0	0	0	0	0	0	0	
14	Beginning working gas - Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
15	+ Cost of Gas Injected	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Ending working gas Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
18	Ending working gas Avg. Cost per Mcf	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	MGU													
19	Beginning working gas - Mcf	136,988	335,452	719,976	1,092,096	1,476,620	1,861,144	2,233,232	2,083,232	1,819,017	1,363,063	902,519	509,727	
20	+ Injections	(198,464)	(384,524)	(372,120)	(384,524)	(384,524)	(372,088)	0	0	0	0	0	0	(2,096,244)
21	-Withdrawals	0	0	0	0	0	0	150,000	264,215	455,954	460,544	392,792	372,739	2,096,244
22	Ending working gas - Mcf	335,452	719,976	1,092,096	1,476,620	1,861,144	2,233,232	2,083,232	1,819,017	1,363,063	902,519	509,727	136,988	
23	Beginning working gas - Cost	$581,692	$1,057,451	$1,999,922	$2,931,924	$3,916,032	$4,908,203	$5,868,626	$5,474,447	$4,780,126	$3,581,942	$2,371,696	$1,339,492	
24	+ Cost of Gas Injected	$475,759	$942,470	$932,003	$984,107	$992,172	$960,423	$0	$0	$0	$0	$0	$0	$5,286,934
25	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	($394,179)	($694,321)	($1,198,184)	($1,210,246)	($1,032,203)	($979,507)	($5,508,641)
26	Ending working gas Cost	$1,057,451	$1,999,922	$2,931,924	$3,916,032	$4,908,203	$5,868,626	$5,474,447	$4,780,126	$3,581,942	$2,371,696	$1,339,492	$359,986	
27	Ending working gas Avg. Cost per Mcf	$3.15	$2.78	$2.68	$2.65	$2.64	$2.63	$2.63	$2.63	$2.63	$2.63	$2.63	$2.63	
28	Net To/(From) Storage	$734,467	$2,456,021	$2,388,674	$2,500,709	$2,510,270	$2,403,911	$112,544	($1,517,824)	($3,093,616)	($3,527,537)	($2,996,079)	($2,544,954)	($573,414)
	Total													
29	Ending working gas - Mcf	785,981	1,734,175	2,651,782	3,599,976	4,548,170	5,465,745	5,510,088	4,944,944	3,796,351	2,489,010	1,378,568	433,775	37,338,565
30	Ending working gas Cost	$2,480,035	$4,936,056	$7,324,730	$9,825,439	$12,335,709	$14,739,620	$14,852,165	$13,334,341	$10,240,724	$6,713,187	$3,717,108	$1,172,154	$101,671,268
31	Ending working gas Avg. Cost per Mcf	$3.16	$2.85	$2.76	$2.73	$2.71	$2.70	$2.70	$2.70	$2.70	$2.70	$2.70	$2.70	$2.72

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - Volume (mcf @ 14.65)
2019-20

Case No. U-17940
Exhibit A-7(SRM-7) Page 15 of 22
Witness: Sarah R. Mead

Line	Sources	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	TOTAL
	SOURCE OF SUPPLY													
1	ANR ETS	1,276,103	1,187,142	819,339	848,664	833,303	924,994	711,670	336,238	523,110	558,005	482,782	406,950	8,908,300
2	ANR ETS SW	115,063	118,899	115,063	118,899	118,899	115,063	118,899	201,361	208,073	208,073	194,649	208,073	1,841,011
3	ANR ETS SE	431,487	445,870	431,487	445,870	445,870	431,487	445,870	134,877	315,037	349,932	288,133	198,877	4,364,799
4	ANR FTS CHI	143,829	148,623	143,829	148,623	148,623	143,829	146,901	0	0	0	0	0	1,024,258
5	ANR ML7	585,724	473,750	128,960	135,272	119,911	234,615	0	0	0	0	0	0	1,678,231
6	PEPL EFT	407,160	420,732	407,160	420,732	420,732	407,160	372,921	515,374	823,579	900,324	855,610	766,643	6,718,127
7	TKLN FT	0	0	0	0	0	0	0	0	0	0	0	0	0
8	MICH CON	0	0	0	0	0	0	0	150,000	155,000	155,000	145,000	155,000	760,000
9	CONSUMERS POWER	0	0	0	0	0	0	0	0	0	0	0	0	0
10	PRODUCTION	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
11	OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0
12	TOTAL GCR PURCHASES	1,688,213	1,612,989	1,231,449	1,274,511	1,259,150	1,337,104	1,089,706	1,006,562	1,506,804	1,618,444	1,488,012	1,333,708	16,446,652
	STORAGE INJECTIONS	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	TOTAL
13	ANR	277,848	574,220	555,697	574,220	574,220	555,697	277,848	0	0	0	0	0	3,389,750
14	MGU	192,896	373,736	361,680	373,736	373,736	361,860	0	0	0	0	0	0	2,037,644
15	Washington 10	0	0	0	0	0	0	0	0	0	0	0	0	0
16	TOTAL INJECTED	470,744	947,956	917,377	947,956	947,956	917,557	277,848	0	0	0	0	0	5,427,394
	STORAGE WITHDRAWALS	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	TOTAL
17	ANR	110,000	0	0	0	0	0	80,000	314,502	724,127	854,153	739,081	567,888	3,389,751
18	MGU	0	0	0	0	0	0	86,800	267,510	457,262	459,044	400,104	366,924	2,037,644
19	Washington 10	0	0	0	0	0	0	0	0	0	0	0	0	0
20	TOTAL WITHDRAWALS	110,000	0	0	0	0	0	166,800	582,012	1,181,389	1,313,197	1,139,185	934,812	5,427,395
21	TOTAL GCR SUPPLY	1,327,469	665,033	314,072	326,555	311,194	419,547	978,658	1,588,574	2,688,193	2,931,641	2,627,197	2,268,520	16,446,653
22	ACCUMULATIVE	1,327,469	1,992,502	2,306,574	2,633,129	2,944,323	3,363,870	4,342,528	5,931,102	8,619,295	11,550,936	14,178,133	16,446,653	

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - Cost
2019-20

Case No. U-17940
Exhibit A-7 (SRM-7) Page 16 of 22
Witness: Sarah R. Mead

Line	Sources	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	TOTAL
	Gas Commodity Charge													
1	ANR ETS													
2	ANR ETS SW	$ 292,641	$ 309,055	$ 305,503	$ 322,459	$ 325,055	$ 314,679	$ 328,075	$ 574,726	$ 633,143	$ 659,761	$ 594,976	$ 648,946	$ 5,309,018
3	ANR ETS SE	$ 1,122,944	$ 1,184,915	$ 1,170,340	$ 1,234,306	$ 1,243,873	$ 1,204,150	$ 1,254,999	$ 260,608	$ 977,180	$ 1,068,779	$ 945,117	$ 723,307	$ 12,390,517
4	ANR FTS CHI	$ 377,546	$ 398,216	$ 393,161	$ 414,488	$ 417,640	$ 404,300	$ 315,568	$ -	$ -	$ -	$ -	$ -	$ 2,720,918
5	ANR ML7	$1,739,486	$1,422,131	$391,654	$373,960	$314,553	$572,520	$0	$0	$0	$0	$0	$0	$ 4,814,304
6	Total	$ 3,532,617	$ 3,314,318	$ 2,260,657	$ 2,345,213	$ 2,301,121	$ 2,495,649	$ 1,898,641	$ 835,334	$ 1,610,323	$ 1,728,540	$ 1,540,093	$ 1,372,253	$ 25,234,757
7	PEPL EFT	$ 989,125	$ 1,045,410	$ 1,034,153	$ 1,092,334	$ 1,101,423	$ 1,066,275	$ 849,998	$ 1,312,649	$ 2,368,481	$ 2,726,797	$ 2,552,183	$ 2,427,264	$ 18,566,093
7	MICH CON	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 427,673	$ 469,149	$ 487,605	$ 439,768	$ 480,106	$ 2,304,301
9	CONSUMERS POWER	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -
10	PRODUCTION	$ 11,556	$ 12,205	$ 12,065	$ 12,736	$ 12,838	$ 12,429	$ 12,958	$ 12,973	$ 14,294	$ 14,896	$ 13,434	$ 14,652	$ 157,033
11	OTHER - Unrealize Hedge (Gain)Loss	$108,406	$99,610	$88,766	$73,290	$54,812	$36,666	$22,810	$9,510	$4,100	$0	$0	$0	$ 497,970
12	TOTAL GAS GCR PURCHASES	$ 4,641,704	$ 4,471,542	$ 3,395,641	$ 3,523,573	$ 3,470,194	$ 3,611,019	$ 2,784,407	$ 2,598,139	$ 4,466,348	$ 4,957,838	$ 4,545,477	$ 4,294,275	$ 46,760,155
	Transportation Commodity Charges													
	ANR ETS													
13	ANR ETS SW	$ 1,848	$ 1,910	$ 1,848	$ 1,910	$ 1,910	$ 1,848	$ 1,910	$ 3,234	$ 3,342	$ 3,342	$ 3,018	$ 3,342	$ 29,460
14	ANR ETS SE	$ 6,030	$ 6,231	$ 6,030	$ 6,231	$ 6,231	$ 6,030	$ 6,231	$ 1,252	$ 4,415	$ 4,640	$ 4,109	$ 3,191	$ 60,621
15	ANR FTS CHI	$ 1,485	$ 1,535	$ 1,485	$ 1,535	$ 1,535	$ 1,485	$ 1,149	$ -	$ -	$ -	$ -	$ -	$ 10,208
16	ANR Sto to Gate	$ 723	$ -	$ -	$ -	$ -	$ -	$ 404	$ 1,743	$ 3,988	$ 4,902	$ 4,075	$ 3,419	$ 19,253
17	Total	$ 10,086	$ 9,675	$ 9,363	$ 9,675	$ 9,675	$ 9,363	$ 9,694	$ 6,229	$ 11,745	$ 12,883	$ 11,203	$ 9,951	$ 119,541
18	PEPL EFT	$ 18,985	$ 19,618	$ 18,985	$ 19,618	$ 19,618	$ 18,985	$ 14,996	$ 22,363	$ 37,775	$ 41,685	$ 39,079	$ 37,742	$ 309,448
19	CONSUMERS POWER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
20	OTHER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
21	TOTAL TRANS CHARGES	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990
22	TOTAL GAS COMMODITY CHARGES	$ 4,670,775	$ 4,500,835	$ 3,423,989	$ 3,552,866	$ 3,499,487	$ 3,639,367	$ 2,809,096	$ 2,626,731	$ 4,515,867	$ 5,012,406	$ 4,595,758	$ 4,341,968	$ 47,189,145

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
Supply Prices ($ per Mcf @ 14.65 dry) and Cost of Gas
2019-20

Case No. U-17940
Exhibit A-7 (SRM-7) Page 17 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
	City Gate Commodity Cost													
1	Supplier Commodity Cost	$ 4,641,704	$ 4,471,542	$ 3,395,641	$ 3,523,573	$ 3,470,194	$ 3,611,019	$ 2,784,407	$ 2,598,139	$ 4,466,348	$ 4,957,838	$ 4,545,477	$ 4,294,275	$ 46,760,155
2	Transportation Commodity Cost	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990
3	Storage Commodity Charges	$ 5,841	$ 8,972	$ 8,682	$ 8,972	$ 8,972	$ 8,682	$ 5,432	$ 4,287	$ 9,871	$ 11,644	$ 10,075	$ 7,741	$ 99,170
4	NNS Charges	$ 1,985	$ 1,897	$ 1,448	$ 1,499	$ 1,481	$ 1,572	$ 1,281	$ 1,184	$ 1,772	$ 1,903	$ 1,750	$ 1,568	$ 19,341
5	Total	$ 4,678,601	$ 4,511,703	$ 3,434,120	$ 3,563,336	$ 3,509,939	$ 3,649,621	$ 2,815,809	$ 2,632,202	$ 4,527,510	$ 5,025,953	$ 4,607,583	$ 4,351,278	$ 47,307,656
	Pipeline Demand/Supply/Reservation Costs													
6	ANR Enhanced Transportation Service (ET	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$165,869	$165,869	$165,869	$165,869	$165,869	$ 1,780,254
7	ANR Firm Transportation Service (FTS)	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$ 264,000
8	ANR No-Notice Service (NNS)	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$96,345	$96,345	$96,345	$96,345	$96,345	$ 931,335
9	ANR Firm Storage Service (FSS)	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$ 3,508,620
10	ANR ETS Between MGU & ANR FSS	$165,264	$0	$0	$0	$0	$0	$0	$388,045	$388,045	$388,045	$388,045	$388,045	$ 2,105,488
11	PEPL Enhanced Firm Transportation (EFT)	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$630,270	$630,270	$630,270	$630,270	$630,270	$ 4,465,530
12	MichCon Transport (FT)	$0	$0	$0	$0	$0	$0	$0	$15,133	$15,133	$15,133	$15,133	$15,133	$ 75,665
13	MichCon Washington 10 Storage Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -
14	Monthly Fixed Charges	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 137,050
15	Total	$870,280	$705,016	$705,016	$705,016	$705,016	$705,016	$705,016	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$13,267,943
16	Total Purchased and Produced (Line 5 + 15	$5,548,880	$5,216,719	$4,139,136	$4,268,352	$4,214,955	$4,354,637	$3,520,825	$4,265,716	$6,161,024	$6,659,467	$6,241,097	$5,984,791	$ 60,575,599
17	Cost/Mcf of Purchased and Produced	$3.2868	$3.2342	$3.3612	$3.3490	$3.3475	$3.2568	$3.2310	$4.2379	$4.0888	$4.1147	$4.1943	$4.4873	$3.6832

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - **Storage**
2019-20

Case No. U-17940
Exhibit A-7 (SRM-7) Page 18 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
		30	31	30	31	31	30	31	30	31	31	29	31	
	ANR													
1	Beginning working gas - M	296,787	464,635	1,038,855	1,594,552	2,168,772	2,742,992	3,298,689	3,496,537	3,182,035	2,457,908	1,603,755	864,674	
2	+ Injections	(277,848)	(574,220)	(555,697)	(574,220)	(574,220)	(555,697)	(277,848)	0	0	0	0	0	(3,389,750)
3	-Withdrawals	110,000	0	0	0	0	0	80,000	314,502	724,127	854,153	739,081	567,888	3,389,751
4	Ending working gas - Mcf	464,635	1,038,855	1,594,552	2,168,772	2,742,992	3,298,689	3,496,537	3,182,035	2,457,908	1,603,755	864,674	296,786	
5	Beginning working gas - C	$1,163,880	$1,503,705	$3,111,519	$4,651,105	$6,244,461	$7,836,806	$9,341,710	$9,860,043	$8,973,165	$6,931,166	$4,522,501	$2,438,333	
6	+ Cost of Gas Injected	$771,201	$1,607,814	$1,539,587	$1,593,356	$1,592,344	$1,504,904	$744,888	$0	$0	$0	$0	$0	$9,354,095
7	- Cost of Withdrawals	($431,376)	$0	$0	$0	$0	$0	($226,556)	($886,878)	($2,041,999)	($2,408,665)	($2,084,168)	($1,601,413)	($9,681,054)
8	Ending working gas Cost	$1,503,705	$3,111,519	$4,651,105	$6,244,461	$7,836,806	$9,341,710	$9,860,043	$8,973,165	$6,931,166	$4,522,501	$2,438,333	$836,920	
9	Ending working gas Avg. (	$3.24	$3.00	$2.92	$2.88	$2.86	$2.83	$2.82	$2.82	$2.82	$2.82	$2.82	$2.82	
	Washington 10													
10	Beginning working gas - M	0	0	0	0	0	0	0	0	0	0	0	0	
11	+ Injections	0	0	0	0	0	0	0	0	0	0	0	0	0
12	-Withdrawals	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Ending working gas - Mcf	0	0	0	0	0	0	0	0	0	0	0	0	
14	Beginning working gas - C	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
15	+ Cost of Gas Injected	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Ending working gas Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
18	Ending working gas Avg. (	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	MGU													
19	Beginning working gas - M	136,988	329,884	703,620	1,065,300	1,439,036	1,812,772	2,174,632	2,087,832	1,820,322	1,363,060	904,016	503,912	
20	+ Injections	(192,896)	(373,736)	(361,680)	(373,736)	(373,736)	(361,860)	0	0	0	0	0	0	(2,037,644)
21	-Withdrawals	0	0	0	0	0	0	86,800	267,510	457,262	459,044	400,104	366,924	2,037,644
22	Ending working gas - Mcf	329,884	703,620	1,065,300	1,439,036	1,812,772	2,174,632	2,087,832	1,820,322	1,363,060	904,016	503,912	136,988	
23	Beginning working gas - C	$581,692	$1,059,294	$2,005,358	$2,940,860	$3,928,606	$4,924,426	$5,888,941	$5,653,886	$4,929,464	$3,691,190	$2,448,091	$1,364,603	
24	+ Cost of Gas Injected	$477,602	$946,064	$935,502	$987,746	$995,820	$964,516	$0	$0	$0	$0	$0	$0	$5,307,249
25	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	($235,056)	($724,422)	($1,238,273)	($1,243,099)	($1,083,489)	($993,637)	($5,517,976)
26	Ending working gas Cost	$1,059,294	$2,005,358	$2,940,860	$3,928,606	$4,924,426	$5,888,941	$5,653,886	$4,929,464	$3,691,190	$2,448,091	$1,364,603	$370,966	
27	Ending working gas Avg. (	$3.21	$2.85	$2.76	$2.73	$2.72	$2.71	$2.71	$2.71	$2.71	$2.71	$2.71	$2.71	
28	Net To/(From) Storage	$817,427	$2,553,877	$2,475,089	$2,581,102	$2,588,164	$2,469,420	$283,277	($1,611,300)	($3,280,272)	($3,651,764)	($3,167,657)	($2,595,050)	($537,686)
	Total													
29	Ending working gas - Mcf	794,519	1,742,475	2,659,852	3,607,808	4,555,764	5,473,321	5,584,369	5,002,357	3,820,968	2,507,771	1,368,586	433,774	37,551,564
30	Ending working gas Cost	$2,562,999	$5,116,876	$7,591,965	$10,173,067	$12,761,231	$15,230,652	$15,513,928	$13,902,628	$10,622,356	$6,970,592	$3,802,936	$1,207,886	$105,457,118
31	Ending working gas Avg. (	$3.23	$2.94	$2.85	$2.82	$2.80	$2.78	$2.78	$2.78	$2.78	$2.78	$2.78	$2.78	$2.81

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - Volume (mcf @ 14.65)
2020-2021

Case No. U-17940
Exhibit A-7 (SRM-7) Page 19 of 22
Witness: Sarah R. Mead

Line	Sources	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	TOTAL
	SOURCE OF SUPPLY													
1	ANR ETS	1,261,598	1,170,557	810,527	843,372	829,124	924,020	627,703	298,048	534,076	577,065	455,426	564,606	8,896,122
2	ANR ETS SW	115,063	118,899	115,063	118,899	118,899	115,063	118,899	201,361	208,073	208,073	187,937	208,073	1,834,299
3	ANR ETS SE	431,487	445,870	431,487	445,870	445,870	431,487	445,870	96,687	326,003	368,992	267,489	356,533	4,493,647
4	ANR FTS CHI	143,829	148,623	143,829	148,623	148,623	143,829	62,934	0	0	0	0	0	940,291
5	ANR ML7	571,219	457,165	120,148	129,980	115,732	233,641	0	0	0	0	0	0	1,627,884
6	PEPL EFT	407,160	420,732	407,160	420,732	420,732	407,160	313,364	518,190	821,924	901,158	836,498	760,319	6,635,129
7	TKLN FT	0	0	0	0	0	0	0	0	0	0	0	0	0
8	MICH CON	0	0	0	0	0	0	0	150,000	155,000	155,000	140,000	155,000	755,000
9	CONSUMERS POWER	0	0	0	0	0	0	0	0	0	0	0	0	0
10	PRODUCTION	4,950	5,115	4,950	5,115	5,115	4,950	5,115	4,950	5,115	5,115	4,620	5,115	60,225
11	OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0
12	TOTAL GCR PURCHASES	1,673,708	1,596,404	1,222,637	1,269,219	1,254,971	1,336,130	946,182	971,188	1,516,115	1,638,338	1,436,544	1,485,040	16,346,476
	STORAGE INJECTIONS	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	TOTAL
13	ANR	270,933	559,927	541,865	559,927	559,927	541,865	270,933	0	0	0	0	0	3,305,377
14	MGU	197,760	383,160	370,800	383,160	383,160	370,920	0	0	0	0	0	0	2,088,960
15	Washington 10	0	0	0	0	0	0	0	0	0	0	0	0	0
16	TOTAL INJECTED	468,693	943,087	912,665	943,087	943,087	912,785	270,933	0	0	0	0	0	5,394,337
		9,031	18,664	18,062	18,664	18,664	18,062	9,031						
	STORAGE WITHDRAWALS	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	TOTAL
17	ANR	100,000	0	0	0	0	0	161,142	356,809	709,871	836,535	740,073	400,947	3,305,377
18	MGU	0	0	0	0	0	0	150,000	268,573	456,129	459,463	390,936	363,859	2,088,960
19	Washington 10	0	0	0	0	0	0	0	0	0	0	0	0	0
20	TOTAL WITHDRAWALS	100,000	0	0	0	0	0	311,142	625,382	1,166,000	1,295,998	1,131,009	764,806	5,394,337
21	TOTAL GCR SUPPLY	1,305,015	653,317	309,972	326,132	311,884	423,345	986,391	1,596,570	2,682,115	2,934,336	2,567,553	2,249,846	16,346,476
22	ACCUMULATIVE	1,305,015	1,958,332	2,268,304	2,594,436	2,906,320	3,329,665	4,316,056	5,912,626	8,594,741	11,529,077	14,096,630	16,346,476	

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - Cost
2020-2021

Case No. U-17940
Exhibit A-7 (SRM-7) Page 20 of 22
Witness: Sarah R. Mead

Line	TOTAL MGU Sources	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	TOTAL
	Gas Commodity Charge													
1	ANR ETS													
2	ANR ETS SW	$ 302,074	$ 319,003	$ 315,323	$ 332,809	$ 335,483	$ 324,774	$ 338,593	$ 593,113	$ 653,321	$ 680,737	$ 613,894	$ 669,598	$ 5,478,723
3	ANR ETS SE	$ 1,157,706	$ 1,221,572	$ 1,206,523	$ 1,272,445	$ 1,282,298	$ 1,241,348	$ 1,293,758	$ 268,649	$ 1,007,281	$ 1,101,669	$ 974,201	$ 745,574	$ 12,773,023
4	ANR FTS CHI	$ 388,999	$ 410,292	$ 405,082	$ 427,053	$ 430,299	$ 416,555	$ 325,132	$ -	$ -	$ -	$ -	$ -	$ 2,803,412
5	ANR ML7	$1,791,481	$1,464,643	$403,362	$385,140	$323,958	$589,637	$0	$0	$0	$0	$0	$0	$ 4,958,221
6	Total	$ 3,640,259	$ 3,415,510	$ 2,330,290	$ 2,417,447	$ 2,372,038	$ 2,572,314	$ 1,957,483	$ 861,762	$ 1,660,602	$ 1,782,406	$ 1,588,096	$ 1,415,172	$ 26,013,379
7	PEPL EFT	$ 1,022,150	$ 1,080,236	$ 1,068,529	$ 1,128,568	$ 1,137,929	$ 1,101,615	$ 878,145	$ 1,355,977	$ 2,446,205	$ 2,815,960	$ 2,635,648	$ 2,506,745	$ 19,177,707
7	MICH CON	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 440,422	$ 483,140	$ 502,149	$ 452,885	$ 494,425	$ 2,373,020
9	CONSUMERS POWER	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -
10	PRODUCTION	$ 11,929	$ 12,599	$ 12,454	$ 13,146	$ 13,251	$ 12,828	$ 13,375	$ 13,389	$ 14,751	$ 15,371	$ 13,862	$ 15,119	$ 162,073
11	OTHER - Unrealize Hedge (Gain)Loss	$108,406	$99,610	$88,766	$73,290	$54,812	$36,666	$22,810	$9,510	$4,100	$0	$0	$0	$ 497,970
12	TOTAL GAS GCR PURCHASES	$ 4,782,745	$ 4,607,955	$ 3,500,039	$ 3,632,450	$ 3,578,030	$ 3,723,423	$ 2,871,813	$ 2,681,060	$ 4,608,797	$ 5,115,885	$ 4,690,490	$ 4,431,461	$ 48,224,149
	Transportation Commodity Charges													
	ANR ETS													
13	ANR ETS SW	$ 1,848	$ 1,910	$ 1,848	$ 1,910	$ 1,910	$ 1,848	$ 1,910	$ 3,234	$ 3,342	$ 3,342	$ 3,018	$ 3,342	$ 29,460
14	ANR ETS SE	$ 6,030	$ 6,231	$ 6,030	$ 6,231	$ 6,231	$ 6,030	$ 6,231	$ 1,252	$ 4,415	$ 4,640	$ 4,109	$ 3,191	$ 60,621
15	ANR FTS CHI	$ 1,485	$ 1,535	$ 1,485	$ 1,535	$ 1,535	$ 1,485	$ 1,149	$ -	$ -	$ -	$ -	$ -	$ 10,208
16	ANR Sto to Gate	$ 723	$ -	$ -	$ -	$ -	$ -	$ 404	$ 1,743	$ 3,988	$ 4,902	$ 4,075	$ 3,419	$ 19,253
17	Total	$ 10,086	$ 9,675	$ 9,363	$ 9,675	$ 9,675	$ 9,363	$ 9,694	$ 6,229	$ 11,745	$ 12,883	$ 11,203	$ 9,951	$ 119,541
18	PEPL EFT	$ 18,985	$ 19,618	$ 18,985	$ 19,618	$ 19,618	$ 18,985	$ 14,996	$ 22,363	$ 37,775	$ 41,685	$ 39,079	$ 37,742	$ 309,448
19	CONSUMERS POWER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
20	OTHER	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
21	TOTAL TRANS CHARGES	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990
22	TOTAL GAS COMMODITY CHARGES	$ 4,811,816	$ 4,637,248	$ 3,528,387	$ 3,661,743	$ 3,607,323	$ 3,751,771	$ 2,896,502	$ 2,709,652	$ 4,658,316	$ 5,170,454	$ 4,740,771	$ 4,479,155	$ 48,653,139

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
Supply Prices ($ per Mcf @ 14.65 dry) and Cost of Gas
2020-2021

Case No. U-17940
Exhibit A-7 (SRM-7) Page 21 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
	City Gate Commodity Cost													
1	Supplier Commodity Cost	$ 4,782,745	$ 4,607,955	$ 3,500,039	$ 3,632,450	$ 3,578,030	$ 3,723,423	$ 2,871,813	$ 2,681,060	$ 4,608,797	$ 5,115,885	$ 4,690,490	$ 4,431,461	$ 48,224,149
2	Transportation Commodity Cost	$ 29,071	$ 29,293	$ 28,348	$ 29,293	$ 29,293	$ 28,348	$ 24,689	$ 28,592	$ 49,519	$ 54,568	$ 50,281	$ 47,693	$ 428,990
3	Storage Commodity Charges	$ 5,596	$ 8,748	$ 8,466	$ 8,748	$ 8,748	$ 8,466	$ 6,430	$ 4,864	$ 9,677	$ 11,403	$ 10,089	$ 5,466	$ 96,702
4	NNS Charges	$ 1,968	$ 1,877	$ 1,438	$ 1,493	$ 1,476	$ 1,571	$ 1,113	$ 1,142	$ 1,783	$ 1,927	$ 1,689	$ 1,746	$ 19,223
5	Total	$ 4,819,381	$ 4,647,873	$ 3,538,291	$ 3,671,984	$ 3,617,547	$ 3,761,809	$ 2,904,045	$ 2,715,658	$ 4,669,776	$ 5,183,784	$ 4,752,549	$ 4,486,367	$ 48,769,064
	Pipeline Demand/Supply/Reservation Costs													
6	ANR Enhanced Transportation Service (ETS)	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$135,845	$165,869	$165,869	$165,869	$165,869	$165,869	$ 1,780,254
7	ANR Firm Transportation Service (FTS)	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$ 264,000
8	ANR No-Notice Service (NNS)	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$64,230	$96,345	$96,345	$96,345	$96,345	$96,345	$ 931,335
9	ANR Firm Storage Service (FSS)	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$292,385	$ 3,508,620
10	ANR ETS Between MGU & ANR FSS	$165,264	$0	$0	$0	$0	$0	$0	$388,045	$388,045	$388,045	$388,045	$388,045	$ 2,105,488
11	PEPL Enhanced Firm Transportation (EFT)	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$187,740	$630,270	$630,270	$630,270	$630,270	$630,270	$ 4,465,530
12	MichCon Transport (FT)	$0	$0	$0	$0	$0	$0	$0	$15,133	$15,133	$15,133	$15,133	$15,133	$ 75,665
13	MichCon Washington 10 Storage Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$ -
14	Monthly Fixed Charges	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 2,816	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 23,467	$ 137,050
15	Total	$870,280	$705,016	$705,016	$705,016	$705,016	$705,016	$705,016	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$1,633,514	$13,267,943
16	Total Purchased and Produced (Line 5 + 15)	$5,689,661	$5,352,889	$4,243,307	$4,377,000	$4,322,563	$4,466,825	$3,609,061	$4,349,172	$6,303,290	$6,817,297	$6,386,063	$6,119,880	$ 62,037,007
17	Cost/Mcf of Purchased and Produced	$3.3994	$3.3531	$3.4706	$3.4486	$3.4444	$3.3431	$3.8143	$4.4782	$4.1575	$4.1611	$4.4454	$4.1210	$3.7951

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
GCR Supply Allocation - **Storage**
2020-2021

Case No. U-17940
Exhibit A-7 (SRM-7) Page 22 of 22
Witness: Sarah R. Mead

LINE	Description	April	May	June	July	August	September	October	November	December	January	February	March	Total
		30	31	30	31	31	30	31	30	31	31	28	31	
	ANR													
1	Beginning working gas - M	296,786	467,719	1,027,646	1,569,511	2,129,438	2,689,365	3,231,230	3,341,021	2,984,212	2,274,341	1,437,806	697,733	
2	+ Injections	(270,933)	(559,927)	(541,865)	(559,927)	(559,927)	(541,865)	(270,933)	0	0	0	0	0	(3,305,377)
3	-Withdrawals	100,000	0	0	0	0	0	161,142	356,809	709,871	836,535	740,073	400,947	3,305,377
4	Ending working gas - Mcf	467,719	1,027,646	1,569,511	2,129,438	2,689,365	3,231,230	3,341,021	2,984,212	2,274,341	1,437,806	697,733	296,786	
5	Beginning working gas - C	$1,163,876	$1,555,486	$3,193,898	$4,758,035	$6,369,437	$7,977,864	$9,491,814	$9,867,367	$8,813,567	$6,717,035	$4,246,414	$2,060,684	
6	+ Cost of Gas Injected	$783,770	$1,638,411	$1,564,138	$1,611,402	$1,608,427	$1,513,950	$848,911	$0	$0	$0	$0	$0	$9,569,009
7	- Cost of Withdrawals	($392,160)	$0	$0	$0	$0	$0	($473,358)	($1,053,799)	($2,096,532)	($2,470,621)	($2,185,731)	($1,184,156)	($9,856,358)
8	Ending working gas Cost	$1,555,486	$3,193,898	$4,758,035	$6,369,437	$7,977,864	$9,491,814	$9,867,367	$8,813,567	$6,717,035	$4,246,414	$2,060,684	$876,527	
9	Ending working gas Avg. C	$3.33	$3.11	$3.03	$2.99	$2.97	$2.94	$2.95	$2.95	$2.95	$2.95	$2.95	$2.95	
	Washington 10													
10	Beginning working gas - M	0	0	0	0	0	0	0	0	0	0	0	0	
11	+ Injections	0	0	0	0	0	0	0	0	0	0	0	0	0
12	-Withdrawals	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Ending working gas - Mcf	0	0	0	0	0	0	0	0	0	0	0	0	
14	Beginning working gas - C	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
15	+ Cost of Gas Injected	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Ending working gas Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
18	Ending working gas Avg. C	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	MGU													
19	Beginning working gas - M	136,988	334,748	717,908	1,088,708	1,471,868	1,855,028	2,225,948	2,075,948	1,807,375	1,351,246	891,783	500,847	
20	+ Injections	(197,760)	(383,160)	(370,800)	(383,160)	(383,160)	(370,920)	0	0	0	0	0	0	(2,088,960)
21	-Withdrawals	0	0	0	0	0	0	150,000	268,573	456,129	459,463	390,936	363,859	2,088,960
22	Ending working gas - Mcf	334,748	717,908	1,088,708	1,471,868	1,855,028	2,225,948	2,075,948	1,807,375	1,351,246	891,783	500,847	136,988	
23	Beginning working gas - C	$581,692	$1,087,378	$2,089,013	$3,079,410	$4,125,061	$5,179,237	$6,200,096	$5,782,290	$5,034,214	$3,763,725	$2,483,949	$1,395,046	
24	+ Cost of Gas Injected	$505,686	$1,001,635	$990,398	$1,045,651	$1,054,176	$1,020,859	$0	$0	$0	$0	$0	$0	$5,618,404
25	- Cost of Withdrawals	$0	$0	$0	$0	$0	$0	($417,806)	($748,076)	($1,270,490)	($1,279,776)	($1,088,903)	($1,013,483)	($5,818,534)
26	Ending working gas Cost	$1,087,378	$2,089,013	$3,079,410	$4,125,061	$5,179,237	$6,200,096	$5,782,290	$5,034,214	$3,763,725	$2,483,949	$1,395,046	$381,563	
27	Ending working gas Avg. C	$3.25	$2.91	$2.83	$2.80	$2.79	$2.79	$2.79	$2.79	$2.79	$2.79	$2.79	$2.79	
28	Net To/(From) Storage	$897,296	$2,640,046	$2,554,536	$2,657,052	$2,662,603	$2,534,809	($42,254)	($1,801,875)	($3,367,022)	($3,750,397)	($3,274,633)	($2,197,639)	($487,478)
	Total													
29	Ending working gas - Mcf	802,467	1,745,554	2,658,219	3,601,306	4,544,393	5,457,178	5,416,969	4,791,587	3,625,587	2,329,589	1,198,580	433,774	36,605,203
30	Ending working gas Cost	$2,642,864	$5,282,910	$7,837,446	$10,494,498	$13,157,101	$15,691,911	$15,649,657	$13,847,782	$10,480,760	$6,730,363	$3,455,730	$1,258,090	$106,529,112
31	Ending working gas Avg. C	$3.29	$3.03	$2.95	$2.91	$2.90	$2.88	$2.89	$2.89	$2.89	$2.89	$2.88	$2.90	$2.91

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

*** * * * ***

In the matter of the application of	)	
MICHIGAN GAS UTILITIES CORPORATION	)	**Case No. U-17940**
to implement a gas cost recovery plan and factors	)	
for the 12-month period from April 2016 through	)	
March 2017, and for related approvals.	)	

DIRECT TESTIMONY AND EXHIBITS OF

Kevin R. Kuse

FOR

MICHIGAN GAS UTILITIES CORPORATION

December 30, 2015

Introduction and Qualifications

Q PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Kevin R. Kuse. My business address is 700 North Adams Street, P.O. Box 19001, Green Bay, WI 54307-9001. I am employed by WEC Business Services, LLC ("WBS") as a Senior Load Forecaster. WBS and Michigan Gas Utilities Corporation ("MGUC") are wholly-owned subsidiaries of WEC Energy Group ("WEC").

Q FOR WHOM ARE YOU PROVIDING TESTIMONY?

A I am providing testimony on behalf of Michigan Gas Utilities Corporation.

Q PLEASE DESCRIBE BRIEFLY YOUR EDUCATIONAL, PROFESSIONAL, AND UTILITY BACKGROUND.

A I hold a Bachelor of Arts Degree in Economics, and a Master of Science Degree in Administrative Science, from the University of Wisconsin – Green Bay. In September 1999, I was hired by Wisconsin Public Service Corporation, a wholly-owned subsidiary of WEC (successor to Integrys Energy Group Inc., ("Integrys")), as a Customer Research Analyst in the Market Research Department. From September 1999 to July 2007, I developed customer insights by gathering and interpreting data from primary survey research and secondary data sources. During that period, I also performed two short-term assignments as the Leader of the Market Research department. In July of 2007, I was hired as a Senior Load Forecaster in the Sales and Revenue Forecasting Department. As a Senior Load Forecaster, I have carried out duties including various aspects of the development of the short-term and long-term electric and gas forecasts for Upper Peninsula Power Company and Integrys' (now WEC's) regulated utility subsidiaries.

Q HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION?

A Yes, I have. I provided written testimony to the Michigan Public Service Commission in Case No. U-17895 (UPPCO's 2016 test year rate case) and Case No. U-16166 (UPPCO's 2011 test year rate case). I have also testified before the Illinois Commerce Commission in Docket Nos. 12-0511/12-0512 (cons.) and Docket Nos. 11-0280/11-0281 (cons.) (Peoples Gas' and North Shore Gas' last two general rate cases), and provided written testimony to the Public Service Commission of Wisconsin in Docket No. 6690-UR-123 (Wisconsin Public Service Corporation's 2015 test year rate case).

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A I am presenting testimony in support of MGUC's 2016-2017 forecast of normal load requirements for the Company's service territory.

Q IN CONNECTION WITH YOUR TESTIMONY, ARE YOU SPONSORING ANY EXHIBITS?

A I am sponsoring the following exhibits, all of which were prepared by me or under my direct supervision:

Exhibits	Contents
A-8 (KRK-1)	GCR (Gas Cost Recovery) and GCC (Gas Customer Choice) Customer Normal Load;
A-9 (KRK-2)	GCR and GCC Customer Counts; and
A-10 (KRK-3)	Five-year Forecast of the Normal Load Requirements for the GCR and GCC Customers.

Q PLEASE DESCRIBE THE METHODOLOGY MGUC USED TO FORECAST THE 2016-2017 GCR and GCC CUSTOMER NORMAL LOAD REQUIREMENTS.

A The forecast methodology MGUC used to forecast the 2016-2017 GCR and GCC Customer normal load requirements was developed utilizing a statistical modeling package known as "MetrixND." Monthly historical data covering the period from January 2007 through November 2014 was input into the MetrixND model. For the 2016-2017 GCR period, the forecast used a 15 year normal, based on the methodology adopted in the Company's general rate case (Case No. U-17273).

Q HOW DOES THE METRIXND MODEL WORK?

A The model uses a simple, ordinary least squares regression methodology that considers economic, demographic, weather (heating degree days), and binary variables to account for the winter and summer months. The model also takes into account economic data such as gross state product, employment, and population.

Q WHAT WEATHER VARIABLE WAS UTILIZED IN THE FORECAST METHODOLOGY?

A The weather variable utilized is based upon a "15-year normal" heating degree day weighted average, derived from four weather stations: Benton Harbor, Coldwater, Monroe, and Grand Rapids, covering the period of January 1998 through December 2013. The "15-year normal" heating degree day equates to 6,153 heating degree days for the GCR forecast. The "15-year normal" was defined in Case No. U-17273 as the average of the 15 coldest years in the most recent 16 year historical period. For this forecast, the applicable years are 1998-2013 with the warmest year being 2012.

Q HOW WAS THE FORECASTED NORMAL LOAD FOR MGUC'S ENTIRE TERRITORY DERIVED?

A The forecasted normal load for MGUC's entire territory was derived using weighted average weather data from the four weather stations. The weights were developed by first taking a snapshot of the number of customers by zip code as of October 2012. The customer classes included in the weighted average methodology were: Residential, Multiple Family, Small and Large Commercial/Industrial customers, and Gas Lighting. Based on zip code, the quantities of the respective customers were tallied by county, and then each county was assigned to a weather station based on the proximity to the weather station. The weights were then calculated by taking the number-of-customers assigned to each weather station dividing by the total number-of-customers. The resulting weights were:

Benton Harbor:	37.0%
Coldwater:	17.3%
Grand Rapids:	17.3%
Monroe:	28.4%

Q WAS A SINGLE UNIFIED NORMAL LOAD FORECASTED?

A Yes. A single unified normal load was forecasted, which includes both GCC and GCR customer load. This means that all customers and usage, both Choice (GCC) and GCR, are added together for Residential, Multiple Family and Small General Services (SC&I) respectively when creating MGUC's forecast. For example, in the Residential class, all the GCC and GCR customers and usages were added together to create an aggregated service territory total for customers and usages,

which was then used as the historical data in the models when creating forecasts in MetrixND.

Q HOW WERE GCC CUSTOMER LOADS DETERMINED?

A In the fall before the GCR filing was submitted, the GCC customer count actuals-to-date were reviewed along with an assessment of expected activity of marketers and a new customer count forecast of GCC customers was prepared as derived in Exhibit A-9 (KRK-2) page 2. The GCC average use per customer by rate class is then calculated by using the historical GCC use per customer by class and adjusting accordingly for trends seen in those classes. Total GCC sales were then calculated for each rate class by taking the updated customer count times use per customer to get total sales, and the remaining balance is, thus, the GCR load as derived in Exhibit A-8 (KRK-1) page 1.

Q WHEN WAS THE AGGREGATE LOAD FORECAST FOR GCR AND GCC CUSTOMERS PREPARED? HOW WILL ADJUSTMENTS FOR MOVEMENT BETWEEN GCR AND GCC SERVICE BY CUSTOMERS AFFECT THE LOAD FORECAST?

A Since the aggregate load forecast prepared in the spring is not changed in total, any adjustment made to GCC customer counts or sales will have an opposite effect on GCR customer counts and sales. The forecast is created in the spring to be used for budgets as well as possible rate cases. The forecast is updated in the fall to account for any customer shifts seen between GCR and GCC customers with more up-to-date actual data that is available.

The total sales and customer forecast for both GCR and GCC is then evaluated against historical data to determine if the forecast is following trends that were seen in prior years, or if future anticipated activities have been accounted for in the forecast. Once the total for both GCR and GCC sales is forecasted, the total is then allocated to each district as derived in Exhibit A-10 (KRK-3). Sales are allocated down to the districts level by using that district's percentage of total sales for both GCR and GCC during the prior GCR period.

Q HAVE THERE BEEN ANY SIGNIFICANT CHANGES IN TRENDS SINCE MGUC'S 2015-16 GCR FORECAST?

A Yes. MGUC has noticed that the trend of GCC customers returning to GCR service is continuing, but at a slightly slower rate than at the time of the last GCR forecast.

Q HAS THIS NEW TREND BEEN REFLECTED IN THE 2016-2017 GCR FORECAST?

A Yes. The forecast of the average number of customers purchasing gas from Alternative Gas Suppliers (AGSs) in the 2015-2016 GCR plan was 21,504 customers. The current GCR forecast of the average number of customers purchasing gas from AGSs in the 2016-2017 GCR plan is 21,392 customers. This reflects historical customer data through September 2015. Consistent with this trend, as shown in Exhibit A-9, the number of GCC customers is forecasted to decrease through the 2017-2018 forecast period and remain at that level through the 2020-2021 forecast period.

Q Does this complete your pre-filed direct testimony?

A Yes, it does.

Total GCR Sales Volume by Rate Class

Fcst 201501 KRK
MCF - Calendar Month GCR Sales

	2016									2017			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	1,036,046	521,991	250,049	233,995	216,174	273,157	642,717	1,055,411	1,899,859	2,095,805	1,855,922	1,745,239	11,826,364
MulF	1,372	886	627	541	519	639	1,180	1,737	2,632	2,856	2,443	2,192	17,624
Small GS	356,279	175,610	63,469	81,564	74,398	104,744	230,833	390,781	693,891	752,803	652,845	588,353	4,165,570
Large GS	24,584	13,793	7,412	5,635	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,841
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,418,401	712,400	321,677	321,855	297,072	385,755	885,357	1,465,767	2,623,181	2,884,874	2,548,708	2,370,793	16,235,840

	2017									2018			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	1,003,740	503,589	245,913	235,464	220,959	286,382	674,329	1,102,188	1,926,773	2,107,816	1,857,365	1,701,854	11,866,371
MulF	1,375	889	630	544	520	641	1,184	1,742	2,638	2,857	2,443	2,191	17,654
Small GS	345,417	170,885	63,094	81,130	74,088	107,546	244,182	406,789	707,799	765,735	660,280	582,042	4,208,986
Large GS	24,583	13,793	7,412	5,634	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,839
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,375,235	689,276	317,169	322,892	301,548	401,784	930,322	1,528,557	2,664,008	2,909,818	2,557,586	2,321,096	16,319,290

	2018									2019			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	975,356	488,032	241,794	236,225	223,812	294,666	691,039	1,123,073	1,925,983	2,112,101	1,856,633	1,669,742	11,838,456
MulF	1,374	888	629	543	519	641	1,182	1,737	2,631	2,868	2,452	2,198	17,662
Small GS	338,464	167,538	62,198	80,199	72,975	107,818	247,603	408,470	704,502	768,354	661,273	576,703	4,196,096
Large GS	24,583	13,793	7,412	5,634	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,839
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,339,896	670,372	312,153	322,721	303,287	410,339	950,452	1,551,118	2,659,914	2,916,733	2,557,856	2,283,652	16,278,493

	2019									2020			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	954,784	476,211	237,623	236,487	225,543	300,815	704,914	1,141,812	1,932,356	2,106,989	1,888,012	1,640,577	11,846,123
MulF	1,378	891	632	546	521	643	1,183	1,740	2,634	2,863	2,509	2,194	17,734
Small GS	334,205	165,517	61,185	79,668	72,349	108,175	250,133	410,984	706,105	764,179	677,078	569,940	4,199,517
Large GS	24,583	13,793	7,412	5,634	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,839
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,315,069	656,533	306,972	322,455	304,394	416,847	966,858	1,572,374	2,667,893	2,907,441	2,605,097	2,247,720	16,289,653

	2020									2021			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	936,848	466,621	234,469	236,688	226,807	304,959	712,851	1,151,294	1,929,930	2,109,142	1,848,573	1,623,467	11,781,649
MulF	1,376	890	632	546	521	642	1,182	1,736	2,628	2,870	2,453	2,200	17,676
Small GS	329,789	163,492	60,239	79,044	71,675	107,830	249,830	409,502	702,459	764,714	657,329	568,470	4,164,372
Large GS	24,583	13,793	7,412	5,634	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,839
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,292,715	644,917	302,872	322,032	304,984	420,645	974,491	1,580,370	2,661,815	2,910,136	2,545,853	2,229,146	16,189,976

Total GCC Sales Volume by Rate Class

Fcst 201501 KRK
MCF - Calendar Month GCC Sales

					2016						2017		12 MOS.
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	107,497	63,986	63,509	18,265	27,691	29,037	87,796	179,203	234,197	295,328	231,492	190,646	1,528,648
MulF	380	245	174	150	143	176	326	479	725	787	673	603	4,861
Small GS	102,504	56,848	63,732	32,466	41,192	38,224	106,555	174,628	232,106	267,796	222,720	190,872	1,529,643
Large GS	0	0	0	0	0	0	0	0	0	0	0	0	-
Gas Light	0	0	0	0	0	0	0	0	0	0	0	0	-
Total	210,381	121,079	127,415	50,881	69,026	67,437	194,677	354,310	467,028	563,911	454,885	382,121	3,063,151

					2017						2018		12 MOS.
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	101,116	60,188	59,739	17,181	26,047	27,313	82,585	168,566	220,295	279,218	219,983	182,094	1,444,326
MulF	378	244	173	149	143	176	324	477	722	781	667	598	4,832
Small GS	96,634	53,592	60,083	30,607	38,833	36,036	100,453	164,627	218,814	253,704	212,039	182,614	1,448,037
Large GS	0	0	0	0	0	0	0	0	0	0	0	0	-
Gas Light	0	0	0	0	0	0	0	0	0	0	0	0	-
Total	198,128	114,024	119,995	47,937	65,023	63,525	183,362	333,670	439,832	533,703	432,689	365,306	2,897,195

					2018						2019		12 MOS.
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	97,074	58,078	57,939	16,748	25,521	26,898	81,747	167,709	220,295	279,218	219,983	182,094	1,433,304
MulF	375	242	172	148	142	174	321	472	715	779	666	597	4,803
Small GS	92,908	51,780	58,337	29,864	38,078	35,508	99,471	163,820	218,814	253,704	212,039	182,614	1,436,938
Large GS	0	0	0	0	0	0	0	0	0	0	0	0	-
Gas Light	0	0	0	0	0	0	0	0	0	0	0	0	-
Total	190,358	110,099	116,448	46,760	63,741	62,581	181,538	332,001	439,825	533,701	432,688	365,305	2,875,045

					2019						2020		12 MOS.
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	97,074	58,078	57,939	16,748	25,521	26,898	81,747	167,709	220,295	279,218	219,983	182,094	1,433,304
MulF	374	242	172	148	142	174	321	471	713	775	679	594	4,805
Small GS	92,908	51,780	58,337	29,864	38,078	35,508	99,471	163,820	218,814	253,704	212,039	182,614	1,436,938
Large GS	0	0	0	0	0	0	0	0	0	0	0	0	-
Gas Light	0	0	0	0	0	0	0	0	0	0	0	0	-
Total	190,357	110,099	116,448	46,760	63,741	62,581	181,538	332,000	439,823	533,697	432,701	365,302	2,875,047

					2020						2021		12 MOS.
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	97,074	58,078	57,939	16,748	25,521	26,898	81,747	167,709	220,295	279,218	219,983	182,094	1,433,304
MulF	372	241	171	147	141	173	319	469	709	775	662	594	4,773
Small GS	92,908	51,780	58,337	29,864	38,078	35,508	99,471	163,820	218,814	253,704	212,039	182,614	1,436,938
Large GS	0	0	0	0	0	0	0	0	0	0	0	0	-
Gas Light	0	0	0	0	0	0	0	0	0	0	0	0	-
Total	190,355	110,098	116,447	46,759	63,740	62,580	181,536	331,998	439,819	533,697	432,684	365,302	2,875,015

Total GCR + GCC Sales Volume by Rate Class

Fcst 201501 KRK
MCF - Calendar Month Total Sales (GCR + GCC)

	2016									2017			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	1,143,543	585,977	313,558	252,260	243,865	302,194	730,513	1,234,614	2,134,056	2,391,133	2,087,414	1,935,885	13,355,012
MulF	1,752	1,131	801	691	662	815	1,506	2,216	3,357	3,643	3,116	2,795	22,485
Small GS	458,783	232,458	127,201	114,030	115,590	142,968	337,388	565,409	925,997	1,020,599	875,565	779,225	5,695,213
Large GS	24,584	13,793	7,412	5,635	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,841
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,628,782	833,479	449,092	372,736	366,098	453,192	1,080,034	1,820,077	3,090,209	3,448,785	3,003,593	2,752,914	19,298,991

	2017									2018			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	1,104,856	563,777	305,652	252,645	247,006	313,695	756,914	1,270,754	2,147,068	2,387,034	2,077,348	1,883,948	13,310,697
MulF	1,753	1,133	803	693	663	817	1,508	2,219	3,360	3,638	3,110	2,789	22,486
Small GS	442,051	224,477	123,177	111,737	112,921	143,582	344,635	571,416	926,613	1,019,439	872,319	764,656	5,657,023
Large GS	24,583	13,793	7,412	5,634	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,839
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,573,363	803,300	437,164	370,829	366,571	465,309	1,113,684	1,862,227	3,103,840	3,443,521	2,990,275	2,686,402	19,216,485

	2018									2019			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	1,072,430	546,110	299,733	252,973	249,333	321,564	772,786	1,290,782	2,146,278	2,391,319	2,076,616	1,851,836	13,271,760
MulF	1,749	1,130	801	691	661	815	1,503	2,209	3,346	3,647	3,118	2,795	22,465
Small GS	431,372	219,318	120,535	110,063	111,053	143,326	347,074	572,290	923,316	1,022,058	873,312	759,317	5,633,034
Large GS	24,583	13,793	7,412	5,634	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,839
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,530,254	780,471	428,601	369,481	367,028	472,920	1,131,990	1,883,119	3,099,739	3,450,434	2,990,544	2,648,957	19,153,538

	2019									2020			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	1,051,858	534,289	295,562	253,235	251,064	327,713	786,661	1,309,521	2,152,651	2,386,207	2,107,995	1,822,671	13,279,427
MulF	1,752	1,133	804	694	663	817	1,504	2,211	3,347	3,638	3,188	2,788	22,539
Small GS	427,113	217,297	119,522	109,532	110,427	143,683	349,604	574,804	924,919	1,017,883	889,117	752,554	5,636,455
Large GS	24,583	13,793	7,412	5,634	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,839
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,505,426	766,632	423,420	369,215	368,135	479,428	1,148,396	1,904,374	3,107,716	3,441,138	3,037,798	2,613,022	19,164,700

	2020									2021			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**TOTAL**
Res	1,033,922	524,699	292,408	253,436	252,328	331,857	794,598	1,319,003	2,150,225	2,388,360	2,068,556	1,805,561	13,214,953
MulF	1,748	1,131	803	693	662	815	1,501	2,205	3,337	3,645	3,115	2,794	22,449
Small GS	422,697	215,272	118,576	108,908	109,753	143,338	349,301	573,322	921,273	1,018,418	869,368	751,084	5,601,310
Large GS	24,583	13,793	7,412	5,634	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,839
Gas Light	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Total	1,483,070	755,015	419,319	368,791	368,724	483,225	1,156,027	1,912,368	3,101,634	3,443,833	2,978,537	2,594,448	19,064,991

Total GCR Customer Count By Rate Class

Case No. U-17940
Exhibit A-9 (KRK-2)
Page 1 of 3
Witness: Kevin R. Kuse

FCST201501 KRK

	2016									2017			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	137,286	136,928	136,390	136,091	136,192	136,574	137,269	138,214	138,326	138,398	138,498	138,604	137,397
MulF	119	119	119	119	119	120	120	120	120	120	120	120	120
Small GS	10,389	10,367	10,344	10,351	10,368	10,399	10,471	10,555	10,571	10,549	10,573	10,601	10,462
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	147,829	147,449	146,889	146,597	146,714	147,128	147,895	148,924	149,051	149,102	149,226	149,360	148,014

	2017									2018			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	138,468	138,215	137,824	137,616	137,712	138,023	138,573	139,313	139,417	139,404	139,411	139,423	138,617
MulF	120	120	120	120	120	120	121	121	121	121	121	121	121
Small GS	10,596	10,588	10,579	10,588	10,602	10,624	10,671	10,723	10,737	10,716	10,721	10,729	10,656
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	149,219	148,959	148,559	148,359	148,469	148,803	149,400	150,192	150,310	150,276	150,288	150,308	149,428

	2018									2019			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	139,249	138,988	138,622	138,394	138,400	138,570	138,922	139,421	139,433	139,422	139,427	139,437	139,024
MulF	121	121	121	121	121	121	121	121	121	121	121	121	121
Small GS	10,718	10,706	10,694	10,691	10,691	10,696	10,715	10,736	10,736	10,724	10,728	10,732	10,713
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	150,123	149,850	149,472	149,241	149,247	149,422	149,793	150,313	150,325	150,302	150,311	150,325	149,894

	2019									2020			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	139,305	139,105	138,826	138,653	138,658	138,787	139,055	139,435	139,445	139,439	139,444	139,451	139,134
MulF	122	122	122	122	122	122	122	122	122	122	122	122	122
Small GS	10,727	10,720	10,713	10,712	10,713	10,716	10,728	10,741	10,742	10,736	10,738	10,742	10,727
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	150,189	149,982	149,696	149,522	149,528	149,660	149,940	150,333	150,344	150,332	150,339	150,350	150,018

	2020									2021			12 MOS.
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	139,349	139,197	138,983	138,850	138,853	138,952	139,159	139,450	139,457	139,452	139,455	139,461	139,219
MulF	122	122	122	122	122	122	122	122	122	122	122	122	122
Small GS	10,740	10,738	10,735	10,735	10,736	10,739	10,747	10,756	10,758	10,756	10,758	10,762	10,746
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	150,246	150,092	149,875	149,742	149,746	149,848	150,063	150,363	150,372	150,365	150,370	150,380	150,122

Total GCC Customer Count By Rate Class

FCST201501 KRK

	2016									2017			12 MOS.
	April	May	June	July	August	September	October	November	December	January	February	March	Average
Res	18,892	18,796	18,701	18,606	18,511	18,417	18,323	18,230	18,137	18,045	17,953	17,862	18,373
MulF	33	33	33	33	33	33	33	33	33	33	33	33	33
Small GS	3,068	3,053	3,038	3,023	3,008	2,993	2,979	2,964	2,949	2,935	2,921	2,906	2,986
Large GS	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas Light	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	21,993	21,882	21,771	21,661	21,552	21,443	21,335	21,227	21,120	21,013	20,907	20,801	21,392

	2017									2018			12 MOS.
	April	May	June	July	August	September	October	November	December	January	February	March	Average
Res	17,771	17,681	17,591	17,501	17,412	17,324	17,235	17,148	17,061	17,061	17,061	17,061	17,325
MulF	33	33	33	33	33	33	33	33	33	33	33	33	33
Small GS	2,892	2,878	2,864	2,850	2,836	2,822	2,808	2,794	2,780	2,780	2,780	2,780	2,822
Large GS	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas Light	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	20,696	20,591	20,487	20,384	20,281	20,178	20,076	19,975	19,874	19,874	19,874	19,874	20,180

	2018									2019			12 MOS.
	April	May	June	July	August	September	October	November	December	January	February	March	Average
Res	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061
MulF	33	33	33	33	33	33	33	33	33	33	33	33	33
Small GS	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780
Large GS	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas Light	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874

	2019									2020			12 MOS.
	April	May	June	July	August	September	October	November	December	January	February	March	Average
Res	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061
MulF	33	33	33	33	33	33	33	33	33	33	33	33	33
Small GS	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780
Large GS	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas Light	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874

	2020									2021			12 MOS.
	April	May	June	July	August	September	October	November	December	January	February	March	Average
Res	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061	17,061
MulF	33	33	33	33	33	33	33	33	33	33	33	33	33
Small GS	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780
Large GS	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas Light	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874

Total Customer Count By Rate Class

FCST201501 KRK

	2016									2017			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	156,178	155,724	155,091	154,697	154,703	154,991	155,592	156,444	156,463	156,443	156,451	156,466	155,770
MulF	152	152	152	152	152	153	153	153	153	153	153	153	153
Small GS	13,457	13,420	13,382	13,374	13,376	13,392	13,450	13,519	13,520	13,484	13,494	13,507	13,448
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	169,822	169,331	168,660	168,258	168,266	168,571	169,230	170,151	170,171	170,115	170,133	170,161	169,406

	2017									2018			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	156,239	155,896	155,415	155,117	155,124	155,347	155,808	156,461	156,478	156,465	156,472	156,484	155,942
MulF	153	153	153	153	153	153	154	154	154	154	154	154	154
Small GS	13,488	13,466	13,443	13,438	13,438	13,446	13,479	13,517	13,517	13,496	13,501	13,509	13,478
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	169,915	169,550	169,046	168,743	168,750	168,981	169,476	170,167	170,184	170,150	170,162	170,182	169,609

	2018									2019			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	156,310	156,049	155,683	155,455	155,461	155,631	155,983	156,482	156,494	156,483	156,488	156,498	156,085
MulF	154	154	154	154	154	154	154	154	154	154	154	154	154
Small GS	13,498	13,486	13,474	13,471	13,471	13,476	13,495	13,516	13,516	13,504	13,508	13,512	13,494
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	169,997	169,724	169,346	169,115	169,121	169,296	169,667	170,187	170,199	170,176	170,185	170,199	169,768

	2019									2020			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	156,366	156,166	155,887	155,714	155,719	155,848	156,116	156,496	156,506	156,500	156,505	156,512	156,195
MulF	155	155	155	155	155	155	155	155	155	155	155	155	155
Small GS	13,507	13,500	13,493	13,492	13,493	13,496	13,508	13,521	13,522	13,516	13,518	13,522	13,507
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	170,063	169,856	169,570	169,396	169,402	169,534	169,814	170,207	170,218	170,206	170,213	170,224	169,892

	2020									2021			**12 MOS.**
	April	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**	**March**	**Average**
Res	156,410	156,258	156,044	155,911	155,914	156,013	156,220	156,511	156,518	156,513	156,516	156,522	156,279
MulF	155	155	155	155	155	155	155	155	155	155	155	155	155
Small GS	13,520	13,518	13,515	13,515	13,516	13,519	13,527	13,536	13,538	13,536	13,538	13,542	13,527
Large GS	23	23	23	23	23	23	23	23	23	23	23	23	23
Gas Light	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	170,120	169,966	169,749	169,616	169,620	169,722	169,937	170,237	170,246	170,239	170,244	170,254	169,996

MICHIGAN GAS UTILITIES DISTRICTS
Gas Annual Requirements Forecast - Fcst201501 KRK
Units:MCF Calendar Sales - GCR

Month	Year	Benton Harbor	Berrien Springs	Cold-Water	ColdWater Lake	Coopersville	Fennville	Grand Haven	Monroe	Morenci-City	Otsego-North	Otego-South	South Haven	Total
Apr	2016	252,064	22,868	232,739	4,694	19,203	28,244	213,719	458,798	8,031	43,748	90,811	43,484	1,418,401
May	2016	128,222	12,478	108,932	2,058	7,935	13,382	115,249	227,030	3,577	20,264	48,670	24,603	712,400
Jun	2016	56,531	5,534	48,270	792	3,867	7,803	58,140	95,454	1,280	9,853	21,532	12,619	321,677
Jul	2016	54,781	3,293	45,988	1,636	3,838	9,673	59,075	96,517	1,380	11,751	19,718	14,207	321,855
Aug	2016	50,755	2,718	42,175	1,201	3,193	9,417	54,307	89,400	1,510	10,959	18,176	13,261	297,072
Sep	2016	71,799	3,205	58,725	1,998	3,262	11,380	66,595	112,659	1,817	15,282	22,953	16,078	385,755
Oct	2016	145,120	6,718	155,758	5,097	8,590	26,025	146,945	255,544	13,302	41,782	51,052	29,422	885,357
Nov	2016	255,389	11,114	245,534	8,708	22,814	39,219	198,607	470,409	8,699	74,643	87,336	43,295	1,465,767
Dec	2016	451,035	24,712	448,151	12,419	32,749	61,300	399,086	798,028	30,448	102,991	175,630	86,630	2,623,181
Jan	2017	578,242	35,624	454,269	13,580	37,588	71,816	407,353	878,691	20,253	107,165	184,106	96,187	2,884,874
Feb	2017	501,353	35,349	390,355	10,074	34,028	54,745	348,702	823,699	14,996	96,300	160,199	78,909	2,548,708
Mar	2017	410,739	33,617	385,344	12,053	29,372	48,679	339,174	796,035	13,835	76,216	148,222	77,508	2,370,793
	Total	2,956,030	197,231	2,616,241	74,310	206,438	381,684	2,406,951	5,102,264	119,130	610,955	1,028,403	536,204	16,235,840
														Total
Apr	2017	244,416	22,168	225,774	4,548	18,610	27,369	207,291	444,712	7,782	42,411	88,017	42,136	1,375,235
May	2017	124,107	12,067	105,460	1,987	7,683	12,935	111,659	219,436	3,458	19,611	47,086	23,787	689,276
Jun	2017	55,768	5,453	47,618	780	3,819	7,688	57,356	94,036	1,260	9,717	21,230	12,445	317,169
Jul	2017	54,907	3,307	46,105	1,645	3,844	9,708	59,270	96,915	1,387	11,792	19,775	14,238	322,892
Aug	2017	51,427	2,766	42,735	1,224	3,230	9,569	55,128	90,943	1,532	11,129	18,436	13,429	301,548
Sep	2017	74,548	3,344	61,093	2,091	3,392	11,877	69,356	117,622	1,900	15,939	23,899	16,723	401,784
Oct	2017	152,521	7,059	163,753	5,349	9,031	27,343	154,286	268,487	14,029	43,876	53,641	30,947	930,322
Nov	2017	266,206	11,598	255,890	9,092	23,787	40,928	207,069	490,877	9,068	77,810	91,060	45,170	1,528,557
Dec	2017	458,198	25,091	455,164	12,596	33,307	62,254	405,211	810,217	30,958	104,598	178,425	87,989	2,664,008
Jan	2018	583,746	35,928	458,340	13,661	38,008	72,408	410,780	885,770	20,421	108,093	185,691	96,973	2,909,818
Feb	2018	503,521	35,461	391,830	10,085	34,239	54,907	349,818	826,111	15,044	96,639	160,774	79,156	2,557,586
Mar	2018	402,499	32,914	377,363	11,759	28,843	47,602	332,155	778,780	13,525	74,645	145,159	75,850	2,321,096
	Total	2,971,865	197,157	2,631,126	74,817	207,792	384,588	2,419,377	5,123,907	120,366	616,260	1,033,194	538,842	16,319,290
														Total
Apr	2018	238,268	21,589	220,130	4,420	18,154	26,648	202,038	432,999	7,577	41,325	85,729	41,019	1,339,896
May	2018	120,768	11,730	102,641	1,927	7,482	12,568	108,730	213,173	3,360	19,080	45,792	23,120	670,372
Jun	2018	54,896	5,365	46,871	767	3,759	7,563	56,483	92,509	1,240	9,564	20,893	12,245	312,153
Jul	2018	54,819	3,309	46,042	1,647	3,833	9,707	59,249	96,967	1,390	11,789	19,758	14,211	322,721
Aug	2018	51,631	2,789	42,904	1,237	3,235	9,632	55,462	91,662	1,540	11,199	18,527	13,469	303,287
Sep	2018	75,864	3,423	62,311	2,147	3,456	12,153	70,867	120,433	1,949	16,301	24,398	17,040	410,339
Oct	2018	155,676	7,219	167,135	5,479	9,229	27,968	157,669	274,566	14,280	44,826	54,797	31,608	950,452
Nov	2018	269,829	11,787	259,315	9,261	24,066	41,580	210,255	498,706	9,163	78,975	92,347	45,833	1,551,118
Dec	2018	457,412	25,059	454,354	12,590	33,224	62,165	404,635	809,186	30,887	104,436	178,111	87,855	2,659,914
Jan	2019	585,197	36,013	459,444	13,689	38,110	72,577	411,740	887,812	20,469	108,349	186,132	97,200	2,916,733
Feb	2019	503,650	35,463	391,892	10,082	34,259	54,907	349,840	826,115	15,045	96,650	160,793	79,159	2,557,856
Mar	2019	396,254	32,385	371,339	11,541	28,435	46,794	326,872	765,830	13,294	73,461	142,848	74,601	2,283,652
	Total	2,964,262	196,131	2,624,378	74,786	207,242	384,263	2,413,840	5,109,958	120,194	615,956	1,030,125	537,359	16,278,493
														Total
Apr	2019	233,986	21,180	216,183	4,329	17,842	26,140	198,351	424,711	7,433	40,564	84,121	40,229	1,315,069
May	2019	118,345	11,482	100,593	1,882	7,339	12,298	106,591	208,544	3,289	18,694	44,845	22,631	656,533
Jun	2019	53,991	5,275	46,095	754	3,696	7,434	55,581	90,941	1,218	9,406	20,544	12,037	306,972
Jul	2019	54,742	3,308	45,984	1,648	3,825	9,701	59,207	96,940	1,390	11,782	19,738	14,189	322,455
Aug	2019	51,765	2,803	43,015	1,244	3,240	9,672	55,673	92,110	1,545	11,243	18,587	13,497	304,394
Sep	2019	76,883	3,482	63,243	2,188	3,505	12,362	72,011	122,551	1,986	16,575	24,778	17,284	416,847
Oct	2019	158,230	7,351	169,872	5,586	9,390	28,480	160,437	279,548	14,477	45,602	55,739	32,145	966,858
Nov	2019	273,302	11,961	262,610	9,413	24,345	42,186	213,223	505,973	9,261	80,067	93,572	46,460	1,572,374
Dec	2019	458,772	25,137	455,662	12,631	33,317	62,355	405,855	811,681	30,976	104,750	178,637	88,122	2,667,893
Jan	2020	583,196	35,899	457,944	13,655	37,963	72,353	410,457	885,122	20,405	108,004	185,540	96,901	2,907,441
Feb	2020	513,241	36,108	399,204	10,254	34,961	55,916	356,140	841,110	15,324	98,419	163,802	80,618	2,605,097
Mar	2020	390,154	31,876	365,524	11,342	28,018	46,030	321,814	753,543	13,075	72,320	140,619	73,405	2,247,720
	Total	2,966,610	195,861	2,625,927	74,926	207,441	384,927	2,415,340	5,112,775	120,379	617,425	1,030,523	537,518	16,289,653
														Total
Apr	2020	230,097	20,814	212,612	4,248	17,553	25,684	195,028	417,303	7,303	39,877	82,674	39,522	1,292,715
May	2020	116,295	11,274	98,862	1,845	7,216	12,072	104,792	204,693	3,229	18,368	44,050	22,221	644,917
Jun	2020	53,269	5,204	45,474	744	3,644	7,333	54,868	89,716	1,202	9,280	20,268	11,871	302,872
Jul	2020	54,636	3,306	45,901	1,648	3,815	9,691	59,137	96,872	1,390	11,768	19,708	14,159	322,032
Aug	2020	51,817	2,813	43,057	1,249	3,239	9,695	55,791	92,389	1,547	11,267	18,615	13,504	304,984
Sep	2020	77,410	3,518	63,766	2,216	3,530	12,488	72,696	123,860	2,009	16,740	24,997	17,415	420,645
Oct	2020	159,326	7,417	171,031	5,646	9,464	28,739	161,781	282,032	14,525	45,971	56,176	32,382	974,491
Nov	2020	274,451	12,034	263,673	9,488	24,408	42,436	214,426	508,990	9,276	80,495	94,003	46,690	1,580,370
Dec	2020	457,649	25,086	454,529	12,614	33,212	62,218	404,975	810,025	30,884	104,510	178,192	87,922	2,661,815
Jan	2021	583,724	35,933	458,363	13,669	37,996	72,422	410,836	885,959	20,425	108,103	185,713	96,994	2,910,136
Feb	2021	501,219	35,300	390,036	10,037	34,082	54,651	348,238	822,298	14,974	96,201	160,029	78,788	2,545,853
Mar	2021	387,132	31,614	362,559	11,226	27,834	45,621	319,184	747,018	12,958	71,735	139,480	72,784	2,229,146
	Total	2,947,026	194,313	2,609,864	74,631	205,993	383,051	2,401,753	5,081,153	119,722	614,315	1,023,905	534,250	16,189,976

MICHIGAN GAS UTILITIES DISTRICTS
Gas Annual Requirements Forecast - Fcst201501 KRK
Units:MCF Calendar Sales - CHOICE

Month	Year	Benton Harbor	Berrien Springs	Cold-Water	ColdWater Lake	Coopersville	Fennville	Grand Haven	Monroe	Morenci-City	Otsego-North	Otego-South	South Haven	Total
Apr	2016	47,185	4,338	48,546	290	1,436	4,431	27,533	39,331	1,532	8,024	19,866	7,869	210,381
May	2016	29,467	3,204	25,044	132	761	2,746	15,610	20,655	812	4,807	12,459	5,381	121,079
Jun	2016	32,032	3,012	24,201	138	728	4,326	18,838	19,647	631	5,891	12,643	5,327	127,415
Jul	2016	13,266	704	8,837	63	288	2,325	7,406	8,003	247	3,455	4,284	2,003	50,881
Aug	2016	17,253	913	13,224	81	372	3,142	10,482	11,060	393	3,792	5,623	2,693	69,026
Sep	2016	17,511	730	13,088	130	325	2,734	9,294	10,861	521	4,410	5,489	2,345	67,437
Oct	2016	45,742	1,894	42,996	408	699	7,859	24,359	30,384	2,528	14,633	17,033	6,142	194,677
Nov	2016	83,460	3,390	72,819	975	2,681	11,230	34,464	70,042	1,771	31,315	31,492	10,672	354,310
Dec	2016	103,602	5,549	108,802	908	2,834	13,213	48,666	82,647	6,266	31,416	45,966	17,160	467,028
Jan	2017	137,939	7,988	137,983	1,178	3,101	15,055	65,008	93,596	5,637	25,830	49,104	21,491	563,911
Feb	2017	109,137	7,658	110,266	898	3,325	11,206	51,918	77,535	3,771	22,693	39,835	16,643	454,885
Mar	2017	81,390	6,645	97,276	734	2,413	9,347	45,791	70,083	3,160	17,470	33,096	14,716	382,121
Total		717,985	46,026	703,082	5,934	18,963	87,614	359,369	533,844	27,269	173,735	276,889	112,442	3,063,151
														Total
Apr	2017	44,426	4,086	45,722	273	1,352	4,174	25,934	37,035	1,442	7,560	18,712	7,412	198,128
May	2017	27,744	3,018	23,585	124	717	2,586	14,703	19,450	765	4,529	11,735	5,068	114,024
Jun	2017	30,163	2,837	22,791	129	686	4,075	17,743	18,501	594	5,550	11,908	5,017	119,995
Jul	2017	12,497	663	8,325	59	271	2,191	6,977	7,542	233	3,256	4,036	1,887	47,937
Aug	2017	16,250	860	12,456	76	350	2,961	9,875	10,420	370	3,572	5,296	2,537	65,023
Sep	2017	16,492	687	12,327	122	306	2,576	8,755	10,233	490	4,155	5,170	2,209	63,525
Oct	2017	43,076	1,784	40,497	383	658	7,403	22,945	28,617	2,381	13,787	16,045	5,785	183,362
Nov	2017	78,580	3,191	68,578	918	2,525	10,577	32,458	65,957	1,667	29,505	29,663	10,051	333,670
Dec	2017	97,542	5,225	102,474	854	2,669	12,446	45,835	77,824	5,900	29,603	43,296	16,162	439,832
Jan	2018	130,538	7,560	130,612	1,114	2,935	14,251	61,524	88,552	5,334	24,458	46,482	20,343	533,703
Feb	2018	103,792	7,284	104,900	853	3,163	10,661	49,390	73,732	3,586	21,595	37,899	15,833	432,689
Mar	2018	77,795	6,353	93,004	701	2,307	8,937	43,781	66,985	3,020	16,708	31,645	14,070	365,306
Total		678,896	43,549	665,272	5,608	17,939	82,838	339,921	504,850	25,784	164,277	261,888	106,374	2,897,195
														Total
Apr	2018	42,677	3,925	43,931	262	1,299	4,011	24,920	35,579	1,385	7,266	17,981	7,122	190,358
May	2018	26,786	2,914	22,774	120	692	2,497	14,199	18,779	738	4,374	11,332	4,894	110,099
Jun	2018	29,269	2,753	22,118	126	666	3,955	17,220	17,953	577	5,387	11,557	4,869	116,448
Jul	2018	12,189	646	8,120	58	264	2,137	6,806	7,358	227	3,176	3,937	1,840	46,760
Aug	2018	15,929	843	12,210	74	343	2,902	9,680	10,215	363	3,502	5,192	2,487	63,741
Sep	2018	16,247	677	12,144	121	302	2,538	8,625	10,081	483	4,093	5,093	2,176	62,581
Oct	2018	42,647	1,766	40,095	380	651	7,330	22,717	28,331	2,357	13,651	15,886	5,728	181,538
Nov	2018	78,186	3,175	68,236	913	2,512	10,524	32,294	65,625	1,659	29,359	29,516	10,001	332,001
Dec	2018	97,542	5,225	102,474	854	2,669	12,446	45,832	77,821	5,900	29,602	43,296	16,162	439,825
Jan	2019	130,537	7,560	130,611	1,114	2,935	14,251	61,524	88,552	5,334	24,457	46,482	20,343	533,701
Feb	2019	103,792	7,284	104,900	853	3,163	10,661	49,390	73,732	3,586	21,595	37,899	15,833	432,688
Mar	2019	77,795	6,353	93,004	701	2,307	8,937	43,781	66,984	3,020	16,707	31,645	14,070	365,305
Total		673,597	43,123	660,616	5,575	17,803	82,190	336,988	501,011	25,631	163,170	259,816	105,526	2,875,045
														Total
Apr	2019	42,677	3,925	43,931	262	1,299	4,011	24,920	35,578	1,385	7,266	17,981	7,122	190,357
May	2019	26,786	2,914	22,774	120	692	2,497	14,199	18,779	738	4,374	11,332	4,894	110,099
Jun	2019	29,269	2,753	22,118	126	666	3,955	17,220	17,953	577	5,387	11,557	4,869	116,448
Jul	2019	12,189	646	8,120	58	264	2,137	6,806	7,358	227	3,176	3,937	1,840	46,760
Aug	2019	15,929	843	12,210	74	343	2,902	9,680	10,215	363	3,502	5,192	2,487	63,741
Sep	2019	16,247	677	12,144	121	302	2,538	8,625	10,081	483	4,093	5,093	2,176	62,581
Oct	2019	42,647	1,766	40,095	380	651	7,330	22,717	28,331	2,357	13,651	15,886	5,728	181,538
Nov	2019	78,186	3,175	68,236	913	2,512	10,524	32,294	65,625	1,659	29,359	29,516	10,001	332,000
Dec	2019	97,541	5,225	102,474	854	2,669	12,446	45,832	77,821	5,900	29,602	43,296	16,162	439,823
Jan	2020	130,535	7,560	130,610	1,114	2,935	14,251	61,524	88,552	5,334	24,457	46,482	20,343	533,697
Feb	2020	103,793	7,285	104,902	853	3,163	10,662	49,394	73,735	3,586	21,596	37,900	15,833	432,701
Mar	2020	77,795	6,353	93,004	701	2,307	8,937	43,780	66,983	3,020	16,707	31,645	14,070	365,302
Total		673,595	43,123	660,617	5,575	17,803	82,190	336,989	501,011	25,631	163,170	259,817	105,526	2,875,047
														Total
Apr	2020	42,677	3,925	43,930	262	1,299	4,010	24,919	35,578	1,385	7,265	17,981	7,122	190,355
May	2020	26,786	2,914	22,774	120	692	2,497	14,198	18,779	738	4,374	11,332	4,894	110,098
Jun	2020	29,269	2,753	22,118	126	666	3,955	17,220	17,952	577	5,387	11,557	4,869	116,447
Jul	2020	12,189	646	8,120	58	264	2,137	6,806	7,357	227	3,176	3,937	1,840	46,759
Aug	2020	15,929	843	12,210	74	343	2,902	9,680	10,214	363	3,502	5,192	2,487	63,740
Sep	2020	16,247	677	12,144	121	302	2,538	8,625	10,080	483	4,093	5,093	2,176	62,580
Oct	2020	42,647	1,766	40,095	380	651	7,330	22,716	28,330	2,357	13,651	15,886	5,728	181,536
Nov	2020	78,186	3,175	68,235	913	2,512	10,524	32,293	65,624	1,659	29,359	29,516	10,001	331,998
Dec	2020	97,541	5,225	102,474	854	2,669	12,446	45,830	77,819	5,900	29,602	43,296	16,162	439,819
Jan	2021	130,535	7,560	130,610	1,114	2,935	14,251	61,524	88,552	5,334	24,457	46,482	20,343	533,697
Feb	2021	103,792	7,284	104,899	853	3,163	10,661	49,389	73,730	3,586	21,594	37,898	15,833	432,684
Mar	2021	77,795	6,353	93,004	701	2,307	8,937	43,780	66,983	3,020	16,707	31,645	14,070	365,302
Total		673,594	43,122	660,614	5,575	17,803	82,190	336,980	500,998	25,631	163,168	259,815	105,526	2,875,015

MICHIGAN GAS UTILITIES DISTRICTS
Gas Annual Requirements Forecast - Fcst201501 KRK
Units:MCF Calendar Sales - Total GCR Plus Choice

Month	Year	Benton Harbor	Berrien Springs	Cold-Water	ColdWater Lake	Coopersville	Fennville	Grand Haven	Monroe	Morenci-City	Otsego-North	Otego-South	South Haven	Total
Apr	2016	299,249	27,207	281,285	4,984	20,638	32,675	241,251	498,129	9,563	51,772	110,676	51,354	1,628,782
May	2016	157,690	15,683	133,976	2,190	8,695	16,127	130,859	247,686	4,389	25,071	61,128	29,984	833,479
Jun	2016	88,564	8,547	72,472	930	4,595	12,128	76,979	115,102	1,912	15,744	34,175	17,946	449,092
Jul	2016	68,046	3,997	54,825	1,699	4,126	11,998	66,480	104,519	1,627	15,207	24,002	16,209	372,736
Aug	2016	68,007	3,631	55,399	1,282	3,564	12,559	64,789	100,460	1,903	14,751	23,799	15,954	366,098
Sep	2016	89,309	3,935	71,813	2,128	3,587	14,115	75,890	123,520	2,338	19,692	28,442	18,424	453,192
Oct	2016	190,862	8,612	198,755	5,505	9,289	33,884	171,304	285,929	15,830	56,415	68,085	35,564	1,080,034
Nov	2016	338,849	14,503	318,353	9,683	25,495	50,449	233,071	540,451	10,470	105,958	118,827	53,968	1,820,077
Dec	2016	554,638	30,261	556,953	13,326	35,583	74,513	447,752	880,675	36,714	134,407	221,596	103,790	3,090,209
Jan	2017	716,181	43,613	592,252	14,757	40,690	86,870	472,360	972,288	25,890	132,995	233,210	117,678	3,448,785
Feb	2017	610,490	43,006	500,621	10,972	37,353	65,951	400,619	901,234	18,767	118,993	200,034	95,552	3,003,593
Mar	2017	492,129	40,262	482,620	12,787	31,785	58,026	384,965	866,117	16,994	93,686	181,318	92,224	2,752,914
	Total	3,674,014	243,257	3,319,323	80,243	225,401	469,298	2,766,320	5,636,108	146,399	784,690	1,305,292	648,646	19,298,991
														Total
Apr	2017	288,842	26,254	271,496	4,821	19,962	31,543	233,225	481,748	9,224	49,971	106,730	49,548	1,573,363
May	2017	151,851	15,085	129,045	2,111	8,399	15,521	126,362	238,886	4,223	24,140	58,820	28,856	803,300
Jun	2017	85,931	8,289	70,410	909	4,505	11,763	75,099	112,537	1,855	15,266	33,138	17,462	437,164
Jul	2017	67,404	3,969	54,429	1,704	4,115	11,899	66,247	104,457	1,620	15,048	23,812	16,125	370,829
Aug	2017	67,677	3,626	55,191	1,300	3,580	12,529	65,003	101,364	1,902	14,701	23,732	15,966	366,571
Sep	2017	91,040	4,032	73,420	2,213	3,698	14,453	78,112	127,856	2,391	20,093	29,069	18,932	465,309
Oct	2017	195,597	8,842	204,250	5,732	9,689	34,746	177,230	297,104	16,410	57,663	69,686	36,732	1,113,684
Nov	2017	344,786	14,790	324,468	10,010	26,311	51,506	239,527	556,835	10,736	107,315	120,723	55,221	1,862,227
Dec	2017	555,740	30,316	557,638	13,450	35,976	74,700	451,046	888,042	36,858	134,201	221,722	104,151	3,103,840
Jan	2018	714,284	43,488	588,951	14,775	40,943	86,659	472,304	974,322	25,755	132,551	232,173	117,316	3,443,521
Feb	2018	607,313	42,746	496,730	10,938	37,402	65,569	399,208	899,843	18,631	118,234	198,673	94,989	2,990,275
Mar	2018	480,294	39,268	470,368	12,460	31,150	56,539	375,936	845,765	16,545	91,353	176,804	89,919	2,686,402
	Total	3,650,761	240,705	3,296,397	80,424	225,731	467,426	2,759,298	5,628,757	146,150	780,537	1,295,082	645,217	19,216,485
														Total
Apr	2018	280,946	25,514	264,060	4,683	19,453	30,659	226,958	468,578	8,962	48,591	103,710	48,140	1,530,254
May	2018	147,554	14,644	125,415	2,047	8,174	15,065	122,928	231,953	4,099	23,454	57,124	28,014	780,471
Jun	2018	84,165	8,118	68,988	893	4,425	11,518	73,703	110,462	1,816	14,950	32,450	17,114	428,601
Jul	2018	67,008	3,955	54,162	1,705	4,097	11,844	66,055	104,325	1,617	14,966	23,695	16,052	369,481
Aug	2018	67,560	3,632	55,114	1,311	3,578	12,535	65,142	101,877	1,903	14,701	23,719	15,956	367,028
Sep	2018	92,111	4,100	74,455	2,267	3,757	14,691	79,492	130,514	2,432	20,394	29,491	19,216	472,920
Oct	2018	198,323	8,985	207,230	5,858	9,880	35,297	180,386	302,897	16,637	58,477	70,683	37,336	1,131,990
Nov	2018	348,015	14,962	327,551	10,174	26,578	52,105	242,549	564,331	10,822	108,334	121,863	55,834	1,883,119
Dec	2018	554,953	30,284	556,828	13,444	35,893	74,610	450,468	887,008	36,787	134,039	221,407	104,017	3,099,739
Jan	2019	715,734	43,573	590,056	14,803	41,046	86,829	473,264	976,364	25,803	132,806	232,614	117,543	3,450,434
Feb	2019	607,442	42,748	496,792	10,935	37,422	65,569	399,230	899,846	18,631	118,245	198,692	94,992	2,990,544
Mar	2019	474,048	38,738	464,343	12,242	30,742	55,731	370,653	832,814	16,314	90,168	174,493	88,671	2,648,957
	Total	3,637,859	239,253	3,284,994	80,361	225,045	466,453	2,750,828	5,610,968	145,825	779,126	1,289,941	642,885	19,153,538
														Total
Apr	2019	276,664	25,106	260,114	4,591	19,141	30,151	223,271	460,290	8,818	47,830	102,102	47,350	1,505,426
May	2019	145,132	14,396	123,367	2,001	8,031	14,795	120,790	227,323	4,027	23,068	56,177	27,525	766,632
Jun	2019	83,260	8,027	68,212	879	4,361	11,389	72,801	108,894	1,795	14,792	32,101	16,906	423,420
Jul	2019	66,932	3,955	54,104	1,706	4,090	11,838	66,013	104,298	1,617	14,958	23,675	16,030	369,215
Aug	2019	67,695	3,646	55,225	1,319	3,583	12,575	65,353	102,325	1,908	14,745	23,778	15,984	368,135
Sep	2019	93,131	4,159	75,387	2,309	3,806	14,900	80,637	132,632	2,469	20,668	29,871	19,461	479,428
Oct	2019	200,877	9,117	209,967	5,966	10,041	35,810	183,154	307,880	16,834	59,253	71,625	37,873	1,148,396
Nov	2019	351,488	15,136	330,845	10,326	26,857	52,710	245,517	571,598	10,921	109,426	123,088	56,461	1,904,374
Dec	2019	556,313	30,362	558,136	13,485	35,986	74,801	451,687	889,501	36,876	134,352	221,933	104,284	3,107,716
Jan	2020	713,731	43,459	588,554	14,769	40,898	86,604	471,980	973,674	25,740	132,461	232,022	117,244	3,441,138
Feb	2020	617,034	43,393	504,106	11,107	38,124	66,577	405,534	914,846	18,910	120,015	201,702	96,450	3,037,798
Mar	2020	467,948	38,229	458,527	12,043	30,326	54,967	365,594	820,527	16,096	89,027	172,264	87,475	2,613,022
	Total	3,640,205	238,985	3,286,544	80,501	225,244	467,117	2,752,330	5,613,786	146,010	780,596	1,290,339	643,044	19,164,700
														Total
Apr	2020	272,774	24,740	256,543	4,510	18,852	29,695	219,947	452,881	8,688	47,142	100,655	46,643	1,483,070
May	2020	143,082	14,188	121,635	1,964	7,908	14,569	118,990	223,472	3,967	22,741	55,382	27,115	755,015
Jun	2020	82,538	7,957	67,591	869	4,309	11,288	72,087	107,668	1,779	14,667	31,825	16,740	419,319
Jul	2020	66,826	3,953	54,021	1,706	4,079	11,828	65,943	104,229	1,617	14,945	23,645	15,999	368,791
Aug	2020	67,747	3,656	55,268	1,324	3,582	12,598	65,470	102,603	1,910	14,769	23,807	15,991	368,724
Sep	2020	93,657	4,195	75,910	2,336	3,832	15,026	81,321	133,940	2,492	20,833	30,090	19,591	483,225
Oct	2020	201,974	9,183	211,126	6,026	10,116	36,069	184,497	310,361	16,882	59,622	72,062	38,110	1,156,027
Nov	2020	352,637	15,210	331,908	10,401	26,920	52,961	246,719	574,614	10,935	109,854	123,519	56,690	1,912,368
Dec	2020	555,190	30,311	557,003	13,468	35,881	74,664	450,806	887,844	36,784	134,112	221,488	104,084	3,101,634
Jan	2021	714,259	43,493	588,973	14,783	40,931	86,673	472,360	974,510	25,759	132,560	232,195	117,337	3,443,833
Feb	2021	605,011	42,584	494,936	10,891	37,245	65,312	397,627	896,028	18,561	117,795	197,927	94,621	2,978,537
Mar	2021	464,926	37,967	455,563	11,927	30,142	54,558	362,964	814,002	15,978	88,442	171,125	86,854	2,594,448
	Total	3,620,620	237,435	3,270,478	80,206	223,797	465,241	2,738,732	5,582,152	145,352	777,483	1,283,720	639,775	19,064,991

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

* * * * *

In the matter of the application of **MICHIGAN GAS UTILITIES CORPORATION** to implement a gas cost recovery plan and factors for the 12-month period from April 2016 through March 2017, and for related approvals.	)))))	Case No. U-17940

DIRECT TESTIMONY

OF

Nicholas J. Krzeminski

ON BEHALF OF

MICHIGAN GAS UTILITIES CORPORATION

Dated: December 30, 2015

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A My name is Nicholas J. Krzeminski and my business address is 70 Sauk River Dr, Coldwater, Michigan 49036.

Q BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A I am employed by Michigan Gas Utilities Corporation ("MGUC" or the "Company"), a wholly-owned subsidiary of WEC Energy Group, as Manager, External Affairs for the State of Michigan.

Q BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EMPLOYMENT HISTORY.

A I attended Kellogg Community College from 1984 to 1986, while there I majored in Business management.

I've been employed with MGUC since November of 2000. Starting as a supervisor of materials, in October of 2001, I served as a Supervisor of Customer Operations until 2007. In the spring of 2007, I took a job rotation as the Supervisor of Network Operations until the spring of 2008, when I accepted the Customer Relations Manager Position. I held that position until 2013 when I accepted the External Affairs position and currently fill that role.

Q HAVE YOU PREVIOUSLY TESTIFIED IN ANY REGULATORY PROCEEDINGS BEFORE THE MPSC?

A Yes, I have testified before the Michigan Public Service Commission ("MPSC" or the "Commission") in the matter of the complaint of Midwest II in Case No. U-17860.

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A I am presenting testimony supporting the new Pegasys process that MGUC will use to calculate Daily Delivery Obligations ("DDO") for Alternative Gas Suppliers ("AGS") and discuss how the implementation of this new system will help MGUC address a recent Commission directive.

Q THE COMMISSION'S JULY 30, 2015 ORDER IN CASE NO. U-17331 DIRECTED THE COMPANY TO ADDRESS THE EFFECTS OF AGS DELIVERY SHORTFALLS AND HOW THE COMPANY PROTECTS ITS GCR CUSTOMERS FROM ANY UNWARRANTED EXPENSES. PLEASE EXPLAIN MGUC'S POLICY TOWARD GAS CUSTOMER CHOICE ("GCC") CUSTOMER LOAD AND AGS DELIVERIES?

A MGUC is bound by the operational constraints of its distribution system and by the Company's tariffs. MGUC has limited injection and withdrawal quantities on a daily basis for its storage accounts, which are necessary to balance its system on a daily basis. Furthermore, MGUC's storage assets are not large enough to store quantities of gas for GCC customers that are not expected to be needed for multiple months. If MGUC were to adjust the AGS DDOs to require more gas than the Company estimates will be needed by the respective GCC customers in the immediate term, MGUC could find itself without enough injection or withdrawal

capability for its GCR customers during critical periods. For example, if MGUC requires multiple AGSs to bring in extra supply during spring or summer months to serve forecasted GCC demand in the coming winter months, MGUC could run out of injection capability for its GCR customers. For this reason MGUC practices "daily load following" for GCC customers.

Q WHAT IS DAILY LOAD FOLLOWING AND WHY IS IT IMPORTANT?

A The term "load follow" means to match supply with demand as closely as possible. Daily load following is important to ensure that the correct amount of gas is delivered to the correct gate on the correct day for the customers behind each of the gates. Matching the DDOs with GCC customer demand on a daily basis will ensure that the AGSs are supplying gas to GCC customers rather than MGUC.

Q ARE THERE ANY LIMITATIONS ON MGUC'S ABILITY TO USE DAILY LOAD FOLLOWING FOR GCC CUSTOMERS?

A Yes. MGUC does not have real-time monitoring data that can differentiate between GCC and GCR customer usage, so MGUC must balance its system on a daily basis using pressure data that cannot differentiate between GCR and GCC customer demand. Second, MGUC must inform each AGS of its respective DDO on the day *before* the gas will actually be consumed. For both of these reasons, MGUC must *estimate* the DDO for each AGS.

Q HAS MGUC MADE ANY CHANGES TO IMPROVE ITS METHOD OF ESTIMATING THE DDO?

A Yes. MGUC has made numerous improvements over the last several years that have improved the Company's ability to account for changes in the number of GCC customers and to better estimate the normalized GCC customer usage. However, natural gas consumption is critically affected by the weather. During the 2016-2017 period, MGUC will be implementing its Pegasys system, which will allow MGUC to adjust a DDO to reflect forecasted colder or warmer than normal weather efficiently and follow the load daily. I will describe the new Pegasys system later in my testimony.

Q HOW ARE GCC CUSTOMERS AND GCR CUSTOMERS PROTECTED IF AN AGS FAILS TO DELIVER ITS DDO?

A MGUC serves as the Supplier of Last Resort, so if an AGS fails to deliver its DDO, MGUC will provide supply to ensure that service is not interrupted for the GCC customers. MGUC will enforce the penalties set forth in the Company's tariff against the AGS who failed to deliver, and MGUC will credit the amounts received from the AGS to the GCR cost of gas. This will help ensure that GCR customers are not subsidizing the cost of gas for GCC customers.

Q HOW WILL THE NEW DDO PROCESS IN PEGASYS WORK?

A On the 3rd week-end of each month, the Base Period DDO for each day of the next month will be set for each AGS. Each AGS will also receive courtesy notice of these Base Period DDOs. Each Base Period DDO will be derived from (a) the normal weather and (b) the actual historical usage for that same day (or a

representative day) for each and every customer who is active in a group/pool supplied by that AGS.

Each day thereafter, the Base Period DDO for each of the next five gas days will then be adjusted to account for the forecasted weather. This adjustment will be performed on a rolling basis, such that the AGS will have access to the projected, adjusted DDO (based upon forecasted weather) for the next five gas days. The AGS will be obligated to deliver the adjusted DDO for the next gas day.

By (i) recalculating the DDO on a rolling five day process (ii) performing this calculation at the individual customer level, and (iii) adjusting the DDOs to account for actual historic usage and the weather forecast; MGUC expects to improve its ability to follow the daily GCC customer load. This will reduce the risk of GCR customers supplementing choice customers' supply.

Q HOW WILL THE BASE PERIOD DATA FOR EACH DAY BE DERIVED?

A The Pegasys system will first attempt to gather each GCC customer's "Base Period" usage from the day 12 months prior to the day for which the data is being estimated - i.e. it will try to get a historical usage that is "representative" of each and every GCC customer's equipment on site. In addition, the Pegasys System will attempt to gather the "Base Period" usage from the day 24 months prior to the day being estimated.

Once the Pegasys System successfully gathers either one or both of the "Base Period" data sets (if it successfully gathers both, then the system will average the usage from both sets of data), the Pegasys System will calculate the appropriate daily Base Period usage.

The Pegasys System will then normalize the data for each customer by calculating the "DegreeDay Coefficient" based on the actual historic weather experienced on the respective day.

Q HOW WILL THE BASE PERIOD DATA BE ADJUSTED TO REFLECT THE FORECASTED WEATHER?

A The calculated "DegreeDay Coefficient" will then be compared to the upcoming weather forecast and adjusted accordingly for each projected day.

The Degree Day Coefficient for a given day = (Heating Degree Day X 0.5) + 50 (50 is the Degree Day Coefficient factor), which is configurable. MGUC sets it to 50 based on tests that were done on sample C-first Accounts compared to the C-first Estimation. The base degree day factor is 65. See Calculation example below.

	Current Period – Period we need to estimate for							
	2/4 2015	2/5 2015	2/6 2015	2/7 2015	2/8 2015	2/9 2015	2/10 2015	Avg.
Temp.	15	24	29	31	27	27	40	27.6
Degree Days	50	41	36	34	38	38	25	37.4
Coef.	75	70.5	68	67	69	69	62.5	68.7

The Degree Day Coefficient for day one above would be (65-15)x0.5 +50 =75.

Q DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A Yes, it does.

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STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

* * * * *

In the matter of the application of **MICHIGAN GAS UTILITIES CORPORATION** for authority to implement a gas cost recovery plan and factors for the 12-month period ending March 31, 2017	)))))	Case No. U-17940

DIRECT TESTIMONY AND EXHIBITS

OF

JOHN P. WIRICK, JR.

ON BEHALF OF

MICHIGAN GAS UTILITIES CORPORATION

Dated: December 30, 2015

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A My name is John P. Wirick, Jr. My business address is 200 E. Randolph Drive, Chicago, Illinois, 60601.

Q BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY.

A I am employed by WEC Energy Group as Coordinator of Gas Modeling in the Planning & Contracts department.

Q PLEASE DESCRIBE YOUR BACKGROUND AND TRAINING.

A With respect to my educational background, I graduated from the Michigan State University Honors College in 1980 and received my MBA in Finance from Michigan State in 1982.

- From 1983 through 1989, I was employed as a Consultant with Planmetrics, Inc. where I completed several varied Gas Supply related assignments with clients across the United States and in Canada. I co-developed the Planmetrics Gas Dispatch and Cost (GDC) Model which was used by 28 natural gas utilities in the United States and Canada.
- I joined the Gas Supply Planning Department of Chicago's Peoples Gas Light and Coke Company in 1989. The Peoples Gas Light and Coke Company is now a part of WEC Energy Group, and the Gas Supply Planning Department is now a part of Planning & Contracts.
- In my total of thirty three years of natural gas industry experience, I have developed supply planning and portfolio optimization models, performed long-range, tactical, and peak day demand forecasts, provided support for

testimony and developed exhibits for regulatory proceedings, answered data requests, spoken at gas industry conferences in the United States and Canada, and co-authored the article "The Peoples Gas Light and Coke Company Plans Gas Supply" published in the September/October 1998 Interfaces journal.

Q HAVE YOU PRESENTED TESTIMONY IN ANY REGULATORY PROCEEDINGS?

A Yes. I have assisted in preparing testimony and exhibits for both The Peoples Gas Light and Coke Company's and North Shore Gas Company's annual Reconciliation filings and many of their rate case proceedings in Illinois. In addition, I have assisted in preparing peak day analysis and related exhibits for Wisconsin Public Service and Minnesota Energy Resources, which have been filed with their respective state commissions. I have also presented testimony and exhibits in MGUC's prior GCR Plan Case Nos. U-15700, U-16145, U-16481, and U-16920.

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A The purpose of my testimony is to present and support MGUC's GCR Plan for the 12 months ending March 31, 2017. Specifically, I will (i) present and support MGUC's peak day analysis for the 2016-2017 GCR period and (ii) present and support MGUC's purchasing strategy guidelines for hedging.

Q PLEASE IDENTIFY THE EXHIBITS YOU ARE SPONSORING IN THIS PROCEEDING.

A I am sponsoring the following exhibits:

Exhibit	Contents
A-11 (JPW-1)	Peak Day Analysis
A-12 (JPW-2)	Status Update on Hedging
A-13 (JPW-3)	2017-2018 Proposed Hedge Strategy

PEAK DAY ANALYSIS

Q WHAT IS MGUC'S 2016-2017 PLAN COMBINED GCR AND GAS CUSTOMER CHOICE (GCC) PEAK DAY REQUIREMENT?

A As shown on page 1 of Exhibit A-11 (JPW-1), the MGUC 2016-2017 peak day GCR/GCC customer requirements estimate is 218,367 Mcf. This represents a decrease of 208 Mcf (0.1%) from the 218,575 Mcf presented in Case No. U-17690 for the 2015-2016 period.

MGUC provides a combined GCR/GCC peak day estimate for two reasons: (i) Many GCC customers have the right to switch back to GCR service within the GCR period, and may do so depending on changing market conditions that are outside of MGUC's control and (ii) MGUC remains the supplier of last resort for all GCC customers and as such must retain the capability of serving them especially under design weather conditions.

Q WHAT ARE MGUC'S 2016-2017 PLAN DESIGN WEATHER CRITERIA FOR ITS GCR/GCC CUSTOMERS?

A Consistent with last year, MGUC's 2016-2017 peak day design weather criteria consists of 75 Corrected Degree Day Deficiency (labeled as "CDDD65" because the pivot point for determining heating degree days is set at 65 degrees Fahrenheit) following a prior day design weather of 68 CDDD65.

Q HOW DID MGUC DETERMINE ITS PEAK DAY REQUIREMENTS?

A MGUC determined its peak day requirements by performing regressions of daily GCR/GCC load with total CDDD65 information using the most recent three years of daily data from the winter months of December through February (December 2012 through February 2015) for all days with 24-hour average temperatures of freezing or colder. The resulting peak day estimates were risk adjusted to provide a 97.5% confidence level that actual loads experienced under design weather conditions would not exceed the estimate. The GCR/GCC regression results provided the 218,367 Mcf peak day estimate for the 2016-2017 winter at the 97.5% confidence level.

Q PLEASE EXPLAIN THE HISTORICAL WEATHER ANALYSIS THAT MGUC PERFORMED?

A The historical weather analysis is shown on Exhibit A-11 (JPW-1), page 5. MGUC analyzed 44 years of historic weather information to determine the number and percentage of occurrences at various levels of CDDD65s

actually experienced. Historical weather information was gathered from and averaged over four weather stations (Benton Harbor, Coldwater, Grand Haven, and Monroe). This weather information was adjusted for the effects of wind and sun to calculate a CDDD65. The CDDD formula is provided on page 6 of Exhibit A-11 (JPW-1) for different Fahrenheit "pivot points." For example, the CDDD65 variable, which is equivalent to the traditional CDDD, uses degree days based on 65 degrees Fahrenheit.

MGUC developed averages of weather information from five weather stations (Benton Harbor, Coldwater, Grand Rapids, Monroe, and Muskegon) for each "gas day" (i.e. 24-hour period from 10 am to 10 am) since January 1, 1999. MGUC uses this five weather station configuration for peak day planning and short-term (daily for six to eight days) load forecasting because it provides a better fit with daily loads. The weather data vendor provided consistent hourly weather data for each of the five stations beginning with January 1, 1999. MGUC used this hourly weather data to re-compute the daily system CDDD65 beginning with January 1, 1999.

The CDDD65 information was sorted in descending order (page 5 of Exhibit A-11 (JPW-1)) and calculations were made as to the number and probability of at least one occurrence during the winter for each CDDD65 level. In 44 years of weather history, 75 CDDD65 or colder has occurred seven times in six different winters. This represents a 6-in-44 or about a 14% chance that any given winter will have at least one occurrence. So it is correct to say that, based on the available 44 years of weather history, the 75 CDDD65 or

colder design weather event is expected to occur about once every seven (44 divided by 6) winters.

Q WHAT PORTION OF THE TOTAL SENDOUT (THROUGHPUT) VOLUMES GENERATED BY THE LINEAR REGRESSIONS IS ATTRIBUTABLE TO GCR/GCC CUSTOMERS?

A Separate Throughput, End User, and GCR/GCC peak day regressions were performed for each MGUC region.

The GCR/GCC customers' point estimate (50% confidence) load of 207,337 Mcf is taken directly from the GCR/GCC regression line with no risk adjustment. The corresponding total Throughput peak day volume is 264,797 Mcf. The portion of total sendout attributable to the combined GCR/GCC customers at a 50% confidence level is 78.3% (207,337 / 264,797).

The GCR/GCC customers' peak day requirement (97.5% confidence) load of 218,367 Mcf includes the risk adjustment. The corresponding total Throughput peak day requirement is 278,772 Mcf. The portion of total sendout attributable to the combined GCR/GCC customers at a 97.5% confidence level is 78.3% (218,367 / 278,772).

Summaries of the results of the GCR/GCC, End User, and Throughput regressions are provided on pages 8 through 10 of Exhibit A-11 (JPW-1).

Q HOW DOES MGUC DETERMINE THE PROTECTION LEVEL IT SHOULD PROVIDE ITS GCR/GCC CUSTOMERS ON A PEAK DAY?

A United States local distribution companies ("LDCs") use a variety of methods to determine their peak day weather conditions. Some base their peak day analysis on the coldest temperature that has ever been experienced by the LDC. Others use a temperature that is expected to occur at least once every 5 or 10 years, and still others use a temperature expected to occur at least once every 20 or 30 years. Each method will result in different costs for the LDC's customers, which must be balanced against the risk of inadequate supply during extreme cold weather conditions (or the costs of procuring supply on the open market under such conditions).

In the Settlement Agreement in Case No. U-12617, MGUC's predecessor agreed that a level of 75 CDDD65 would be used for 2001. The 75 CDDD65 level was recently reaffirmed in Case No. U-15700 as being appropriate for the total MGUC system. In keeping with the process used in Case Nos. U-15700, U-16145, U-16481, U-16920, U-17130, U-17331, and U-17690, the 75 CDDD65 will be used again for 2016-2017 along with a volume risk adjustment to provide a 97.5% confidence level that actual load experienced under design conditions will not exceed the estimate. The 2016-2017 design day process also uses the prior day design criteria of 68 CDDD65 that was approved in Case No. U-17690.

Q HAS MGUC INVESTIGATED VARIOUS REGRESSION SCENARIOS TO IMPROVE ITS ESTIMATION CAPABILITIES?

A Yes, it has. As RRC Witness Hollewa suggested in Case Nos. U-15700 and U-16920, the Company considered alternative possible weather variables, including prior day weather variables, besides CDDD65. This consideration included the preparation of various regressions to determine the best set of explanatory (independent) variables to use for each customer class and each region. Pages 1 and 2 of Exhibit A-11 (JPW-1) discuss the regressions prepared for the 2016-2017 period, including the seventh study the Company performed that tested over thirty different explanatory (sometimes called independent) variables; including current day weather, prior day weather, day type, and weather normalized sales; to determine the best set of explanatory variables to use for each MGUC region and customer class. The study is discussed on pages 2 and 3 of Exhibit A-11 (JPW-1). A list and description of the explanatory variables considered is provided on page 6 of Exhibit A-11 (JPW-1). The best set of explanatory variables for each MGUC region and customer class for both last year's and this year's studies is provided on page 7 of Exhibit A-11 (JPW-1).

Summaries of the results of seven sets of regressions performed for GCR/GCC loads are provided on page 8 of Exhibit A-11 (JPW-1). Summaries of the results of seven sets of regressions performed for End User loads are provided on page 9 of Exhibit A-11 (JPW-1). Summaries of the results of seven sets of regressions performed for total Throughput are provided on page 10 of Exhibit A-11 (JPW-1).

Brief descriptions of the seven sets of regressions presented for each region (Western, Coldwater, Monroe, and Total MGU) and each customer class (GCR/GCC, End User, and Throughput) are:

1. **Last Year: CDDD65, CDDD65-1 + S** is as filed in Case No. U-17690 for the 2015-2016 peak day. (Note: the "65" is added to denote the traditional practice of computing CDDD based on heating degree days with a pivot point of 65 degrees Fahrenheit – meaning that a day with an average temperature of 64 degrees Fahrenheit would provide one heating degree day. The CDDD formula then adjusts that heating degree day for wind and sunshine effects. The CDDD65 formula is provided on page 12 of Exhibit A-11 (RTH-1).)
2. **S** represents the best results from this year's explanatory variable study. Unfortunately, the best combination of variables was not consistent across MGUC's regions, customer classes, or years.
3. **CDDD65 + S** consistently uses the traditional CDDD65 weather variable, significant prior day weather variables, and significant non-weather variables such as day type, month, and weather normalized sales.
4. **CDDD65, CDDD65-1 + S** consistently uses the traditional CDDD65 weather variable, the prior day traditional CDDD65-1 weather variable, and significant non-weather variables such as day type, month, and weather normalized sales.

5. **CDDD65 + S (No Lag)** consistently uses the traditional CDDD65 weather variable and significant non-weather variables such as day type, month, and weather normalized sales.
6. **CDDD65** uses only the traditional CDDD65 variable. This regression is performed for comparison against the CDDD65+S (No Lag) results to determine the extent that the non-weather variables improve the regression.
7. **HDD65** uses only the HDD65 variable. This regression is performed for comparison against the CDDD65 results to determine whether CDDD65 is a better statistical fit than HDD65.

Q HOW DID MGUC SELECT THE FINAL REGRESSIONS TO USE FROM ALL OF THE ALTERNATIVE REGRESSIONS PERFORMED?

A MGUC selected the regressions from the "CDDD65, CDDD65-1 + S" set for the GCR/GCC and Throughput customer classes. Twelve of the twelve best variable sets from last year and this year use a prior day weather variable for these two customer classes.

MGUC selected the regressions from the "CDDD65 + S (No Lag)" set for the End User customer class. Only one of the six best variable sets from last year and this year use a prior day weather variable for this customer class. MGUC suspects that the End User customer class is more influenced by non-weather factors (weekends, holidays, etc…) than prior day weather. For

example, industrials and some commercials run fewer hours or partial shifts Friday, Saturday, or Sunday.

The "S" set was not selected because the sets of explanatory variables were not consistent across MGUC's three geographic regions. This lack of consistency would result in some regions using different weather variables than CDDD65, which would require changing the 75 CDDD65 design criteria agreed to in Case No. U-15700. As discussed further on pages 3 and 4 of Exhibit A-11 (JPW-1), MGUC decided that the use of the "S" set was not worth pursuing at this time because it would require multiple different weather variables and associated sets of design criteria, which could change from year-to-year and from one MGUC geographic region to the next, further complicating the total region and total MGUC equations.

PURCHASING STRATEGY GUIDELINES FOR HEDGING

Q WHAT IS HEDGING?

A Hedging is when you take a position in an attempt to offset exposure to fluctuations in some opposite position with the goal of reducing the exposure to some unwanted risk (e.g., risk of significant changes in MGUC's Sales customers' natural gas bills). As outlined in Attachment B to the settlement agreement for the 2008-2009 GCR Plan, Case No. U-15450, MGUC agreed to purchase fixed price supplies for its Sales customers at least 6 months prior to the delivery of those supplies. When MGUC made these purchases, MGUC "hedged" its Sales customers' exposure to natural gas price changes.

Q IS MGUC CURRENTLY HEDGING ITS SALES CUSTOMERS' EXPOSURE TO NATURAL GAS PRICE CHANGES?

A Yes, it is. MGUC is utilizing the gas purchasing strategy guidelines for hedging established in the 2014-2015 and 2015-2016 GCR Plans (Case Nos. U-17331 and U-17690, respectively).

Q WHY IS MGUC CURRENTLY HEDGING?

A MGUC is hedging because MGUC believes its Sales customers want to reduce their exposure to changes in natural gas prices. According to the gas utility residential customer satisfaction study conducted by J.D. Power and Associates, "consumers don't like surprises – especially when it comes to essential services. The most satisfied customers are those who believe their monthly bill will not change significantly."[1]

Q WHAT ARE MGUC's PURCHASING STRATEGY GUIDELINES FOR HEDGING FOR THE 2016-2017 GCR PERIOD?

A MGUC is using the same purchasing strategy guidelines for hedging for the 2016-2017 GCR period as was described in the Revised Direct Testimony and Exhibits of Ron Hrad in Case No. U-17690. MGUC is hedging approximately 20% of its 2016-2017 GCR Plan winter purchase requirements and approximately 20% of its 2016-2017 GCR Plan summer purchase requirements. The exact hedge target volumes by month are

[1] American Gas Association, Avoiding the Wild Ride (November 2003), Page 7.

270,000 MMBtu in each summer month and 300,000 MMBtu in each winter month for a 2016-2017 GCR Plan year total hedge target volume of 3,390,000 MMBtu. MGUC may utilize a 12-month trading window to execute its hedges for each hedge month. This 12-month trading window is from 13 months before the hedge month to 1 month before the hedge month. For example, MGUC is hedging April 2016 between and including March 2015 and February 2016. During each month of this 12-month trading window, MGUC will not hedge more than 50,000 MMBtu for each hedge month. Finally, MGUC may hedge using the following hedging tools: physical fixed-price, financial fixed-price, physical call options, financial call options, physical consumer collars, and financial consumer collars. As discussed below, MGUC may also hedge basis differentials using physical basis and financial basis products.

Q IS MGUC CURRENTLY HEDGING BASIS DIFFERENTIALS IN ACCORDANCE WITH THE BASIS ANALYSIS STUDY COMPLETED IN DECEMBER 2014 AND DISCUSSED IN CASE NO. U-17690?

A Yes. An RFP was issued in the summer of 2015 that included a physical basis hedge of 5,000 Dth/d for PEPL for November 2015 to March 2016 baseload supply. This RFP also included a physical basis hedge of 2,500 Dth/d for ANR SW for November 2015 to March 2016 baseload supply.

Q HOW EFFECTIVE HAVE THESE BASIS HEDGES BEEN IN REDUCING VOLATILITY DURING THE 2015-2016 PLAN YEAR?

A These basis hedges covered baseload supply for November 2015 through March 2016. In order to provide a useful answer to the amount of volatility reduced by the basis hedges during this, their inaugural year, MGUC needs to be able to compare the unhedged gas price volatility against the hedged gas price volatility. To do that, MGUC needs the actual prices for the entire November 2015 through March 2016 time period. MGUC proposes to perform this calculation as an "after the fact" analysis using actual data and file the results as part of the subsequent GCR plan filing.

Q DOES MGUC PLAN TO HEDGE ANY BASIS DURING THE 2016-2017 TIME PERIOD?

A Yes. An RFP will be issued in the summer of 2016 that will include a physical basis hedge of approximately 5,000 Dth/d (subject to a supply/demand analysis completed in the summer of 2016) for PEPL for November 2016 to March 2017 baseload supply. This RFP will also include a physical basis hedge of approximately 2,500 Dth/d (subject to a supply/demand analysis completed in the summer of 2016) for ANR SW for November 2016 to March 2017 baseload supply. Additional physical and financial basis hedges will be considered for April 2017 to March 2018 subject to supply/demand analyses completed after the summer of 2016. Like the November 2016 to March 2017 physical basis hedges, the physical and financial basis hedges for April 2017 to March 2018 will not exceed the proposed NYMEX hedge quantities. Hedging basis is completely separate, but complementary, to our current hedging program. We would

still follow our plan to hedge approximately 20% of our fixed price risk (i.e. NYMEX price risk), and then additionally hedge up to 20% of our basis price risk for the 2016-2017 GCR period and beyond (i.e. difference between NYMEX and purchase point index).

Q HOW HAS THE COMPANY IMPLEMENTED ITS PURCHASING STRATEGY GUIDELINES FOR HEDGING FOR THE 2016-2017 GCR PERIOD?

A MGUC has hedged supplies following a mechanistic approach involving the execution of a predetermined quantity of hedges, according to a predetermined timeline ("time-driven"). The objective of this approach is to take much of the subjectivity out of when to hedge, allowing for a price averaging component to the quantity under this time-driven approach. In other words, the Company does not believe it (or anyone) can outguess the market and execute hedges that will consistently reduce prices. On the other hand, the Company believes it can execute hedges that will reduce price volatility. As mentioned above, during each month of the 12-month trading window a maximum allowable hedge quantity of 50,000 MMBtu for each hedge month would be allowed. MGUC selected this quantity to allow the Gas Supply Manager to hedge in even lots (i.e., one lot equals 10,000 MMBtu per month) and to hedge using seasonal strips (i.e., April to October equals a summer strip; November to March equals a winter strip). The Company also added this 50,000 MMBtu monthly limit because it believes it is prudent to spread hedges over multiple months. This limit forces the

Company to spread each hedge month's hedges over at least six months. In particular, it takes at least six months to hedge the summer hedge months (i.e., 270,000 MMBtu divided by 50,000 MMBtu equals 5.4 or more than five months) and it takes at least six months to hedge the winter hedge months (i.e., 300,000 MMBtu divided by 50,000 MMBtu equals 6.00 or six months if the limit was hedged each month).

Q WHAT TOOLS MAY BE USED BY THE COMPANY TO HEDGE THE 2016-2017 GCR PERIOD?

A MGUC will continue to hedge either physically by locking purchases across some or all of the interstate and intrastate pipelines that serve MGUC or financially by using an exchange (e.g., New York Mercantile Exchange) traded product (e.g., futures or option contract) or by using an over-the-counter traded product. MGUC may hedge using the following hedging tools: physical fixed-price, financial fixed-price, physical call options, financial call options, physical consumer collars, and financial consumer collars. As discussed above, MGUC may also hedge basis differentials using physical basis and financial basis products.

Q PLEASE EXPLAIN HOW THESE HEDGING TOOLS WORK.

A First, buying a call option gives the Company the right, but not the obligation, to purchase gas at a particular price (i.e., strike price), effectively "capping" the price to be paid. This allows Sales customers to benefit from falling prices while dampening the effects of a price run-up.

Second, a consumer collar (i.e., buying a call option and selling a put option) gives the Company the right, but not the obligation, to purchase gas at the call option strike price and gives the put option buyer the right, but not the obligation, to sell gas to the Company at the put option strike price. By completing a consumer collar transaction, the Company has placed "a floor and a ceiling" on the price to be paid. This allows Sales customers prices to move up and down with the market price while dampening the effects of a price run-up or run-down.

Third, a fixed-price transaction establishes a known price to be paid by the Company. This does not allow Sales customers to gain or lose from rising or falling prices, and, therefore, completely dampens the effects of price changes at the transaction's delivery location.

Finally, the three tools mentioned above can be executed in either the physical or the financial markets producing the same price outcome for Sales customers. The main difference between executing in the physical and financial markets, however, is the effect on liquidity (e.g., cash flow) and credit (e.g., counterparty exposure). Therefore, the Company would prefer to have the ability to manage its liquidity and credit risks by having both physically and financially traded tools in its "toolbox".

Q HOW DOES THE COMPANY DETERMINE WHICH TOOL TO USE FOR ITS HEDGING PROGRAM FOR THE 2016-2017 GCR PERIOD?

A After analyzing the expected results of using fixed-price, call option or consumer collar hedges, the Company believes all three tools achieve the desired goal of reducing price volatility. Fixed-price hedges have the greatest dampening effect on price volatility, but fixed-price hedges produce the greatest chance of adding costs that are not entirely reflective of the current market. Call option hedges have less of a dampening effect on price volatility than consumer collar hedges, but call option hedges have a greater chance of producing gas costs that are more reflective of the current market than consumer collar hedges. While there is no sure combination of these three tools which will perform equally well in reducing price volatility and producing gas costs that are reflective of the current market, the Company believes most combinations of these three tools will work provided that the Company limits the amount of net option premium as follows:

1) The Company may purchase call options with an option premium not to exceed $1.00/MMBtu. Since the Company is hedging 3,390,000 MMBtu for the 2016-2017 GCR Plan year, the Company will not pay more than $3,390,000 in option premium for its call option hedges for the 2016-2017 GCR Plan year if 100% of its hedges are call option hedges.

2) Similarly, the Company may purchase consumer collars with a net option premium between zero and fifty cents per MMBtu. Since the Company is hedging 3,390,000 MMBtu for the 2016-2017 GCR Plan year, the Company will not pay more than $1,695,000 in net option premium for its consumer collar hedges for the 2016-2017 GCR Plan year if 100% of its hedges are consumer collar hedges.

As in the case of its sister corporation, Wisconsin Public Service Corporation, MGUC's reasonably and prudently incurred premiums on these physical and financial tools and any corresponding gains and losses will be treated as booked costs of gas for GCR purposes.

Q HAS MGUC'S HEDGING PROGRAM REDUCED PRICE VOLALITY FROM APRIL-2012 TO MARCH-2015?

A Yes, it has. Pages 1, 2 and 3 of Exhibit A-12 (JPW-2) depict the historic volatility calculation from April-2012 to March-2015. As shown on page 3, Line 22, in the column labeled "Volatility" (am), the annualized price volatility using monthly data was reduced by 7.0%. The graph on page 4 of Exhibit A-12 (JPW-2) illustrates the NYMEX hedge price in comparison to the NYMEX settlement price over that same period. The graph on page 5 of Exhibit A-12 (JPW-2) illustrates MGUC's total purchased and produced cost of gas without and with hedging over that same period. The graph on page 6 of Exhibit A-12 (JPW-2) illustrates MGUC's total purchased and produced cost of gas without hedging in comparison to the NYMEX settlement price over that same period.

Q PLEASE PROVIDE A STATUS UPDATE ON MGUC'S PURCHASING STRATEGY GUIDELINES FOR HEDGING FOR THE 2014-2015, 2015-2016, and 2016-2017 GCR PERIODS.

A MGUC hedged 2,860,000 MMBtu for the 2014-2015 GCR period. Pages 7 through 18 of Exhibit A-12 (JPW-2) show 214 realized hedges using futures

contracts and 72 realized hedges using options contracts (i.e., 214 + 72 = 286. 10,000 MMBtu per contract x 286 contracts = 2,860,000 MMBtu).

MGUC has already hedged a portion of the supply for the 2015-2016 GCR period. As of November 30, 2015, MGUC has hedged 2,800,000 MMBtu of its 2,860,000 MMBtu hedge target volumes for the 2015-2016 GCR Plan year. Pages 7 through 18 of Exhibit A-12 (JPW-2) show 157 realized hedges using futures contracts, 54 unrealized hedges using futures contracts, 54 realized hedges using options contracts, and 15 unrealized hedges using options contracts (i.e., 157 + 54 + 54 + 15 = 280. 10,000 MMBtu per contract x 280 contracts = 2,800,000 MMBtu).

MGUC has already hedged a portion of the supply for the 2016-2017 GCR period. As of November 30, 2015, MGUC has hedged 1,140,000 MMBtu of its 3,390,000 MMBtu hedge target volumes for the 2016-2017 GCR Plan year. Pages 7 through 18 of Exhibit A-12 (JPW-2) show 108 unrealized hedges using futures contracts and 6 unrealized hedges using options contracts (i.e., 108 + 6 = 114. 10,000 MMBtu per contract x 114 contracts = 1,140,000 MMBtu).

Page 7 of Exhibit A-12 (RTH-2) shows a financial summary of all realized and unrealized gains and losses by season from April 2014 to December 2015 as of November 30, 2015 with a realized loss of $2,361,470 for 4,670,000 MMBtu of hedges (i.e., loss of $0.506 per MMBtu) from April 2014

to December 2015 and an unrealized loss of $977,630 for 1,830,000 MMBtu of hedges (i.e., loss of $0.534 per MMBtu) from January 2016 to December 2016. Broker fees incurred for the April 2014 to December 2015 totaled $9,401.

Q WHAT ARE MGUC's PURCHASING STRATEGY GUIDELINES FOR HEDGING FOR THE REMAINING PORTION OF THE FIVE-YEAR FORECAST?

A MGUC intends to use the same purchasing strategy guidelines for hedging described above for the remainder of the five-year forecast period with updated volumes. MGUC will continue to hedge approximately 20% of its GCR Plan winter purchase requirements and approximately 20% of its GCR Plan summer purchase requirements. Exhibit A-13 (JPW-3) page 1 lists the exact hedge target volumes by month (280,000 MMBtu in each summer month and 260,000 MMBtu in each winter month) and by year (3,260,000 MMBtu) for the 2017-2018 forecast period. MGUC will continue utilize a 12-month trading window to execute its hedges for each hedge month. This 12-month trading window will be from 13 months before the hedge month to 1 month before the hedge month. For example, MGUC will hedge April 2017 between and including March 2016 and February 2017. During each month of this 12-month trading window, MGUC will not hedge more than 50,000 MMBtu for each hedge month. Exhibit A-13 (JPW-3) page 2 illustrates how the 12-month trading window and the maximum allowable hedges will work. The horizontal titles explain when the hedges are executed or the "trade

date". The vertical titles explain what forward month is hedged or the "hedge month". For example, Exhibit A-13 (JPW-3) page 2 line 13 illustrates how MGUC will hedge no more than 600,000 MMBtu or 18% of its annual hedge target volume of 3,260,000 MMBtu during the month of February 2016. Finally, MGUC may continue using the following hedging tools: physical fixed-price, financial fixed-price, physical call options, financial call options, physical consumer collars, financial consumer collars, physical basis, and financial basis.

Q HOW WILL THE COMPANY IMPLEMENT ITS PURCHASING STRATEGY GUIDELINES FOR THE 2017-2018 FORECAST PERIOD?

A MGUC plans to continue hedging supplies following the same approach described earlier in my testimony for the 2016-2017 GCR period.

Q HOW WILL THE COMPANY DETERMINE WHICH TOOL TO USE FOR ITS HEDGING PROGRAM FOR THE 2017-2018 FORECAST PERIOD?

A While there is no sure combination of fixed-price, call option or consumer collar hedges which will perform equally well in reducing price volatility and producing gas costs that are reflective of the current market, the Company believes most combinations of these three tools will work provided that the Company limits the amount of net option premium as follows:

1) The Company may purchase call options with an option premium not to exceed $1.00/MMBtu. Since the Company plans to hedge 3,260,000 MMBtu for the 2017-2018 GCR Plan year, the Company will not pay more than

$3,260,000 in option premium for its call option hedges for the 2017-2018 GCR Plan year if 100% of its hedges are call option hedges.

2) Similarly, the Company may purchase consumer collars with a net option premium between zero and fifty cents per MMBtu. Since the Company plans to hedge 3,260,000 MMBtu for the 2017-2018 GCR Plan year, the Company will not pay more than $1,630,000 in net option premium for its consumer collar hedges for the 2017-2018 GCR Plan year if 100% of its hedges are consumer collar hedges.

As in the case of its sister corporation, Wisconsin Public Service Corporation, MGUC's reasonably and prudently incurred premiums on these physical and financial tools and any corresponding gains and losses will be treated as booked costs of gas for GCR purposes.

Q DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?

A Yes, it does.

integrys tm

DEPARTMENTAL CORRESPONDENCE

Subject	MGUC 2016-2017 Peak Day Requirements	Date	December 18, 2015
To	Sarah Mead	From	Ron Hrad John Wirick
		Copy To	Dave Tyler Kristie Wiegand Brian Marozas Lilian Thomas

Summary

The Michigan Gas Utilities Corporation ("MGUC") 2016-2017 peak day GCR/GCC customer requirements estimate is 218,367 Mcf. This represents a decrease of 208 Mcf (0.1%) from the 218,575 Mcf presented in Case No. U-17690. The associated peak day Total Throughput requirements are 278,772 Mcf. This represents an increase of 9,416 (3.5%) from the 269,357 presented in Case No. U-17690.

These requirements were developed based on the following risk-based preferences of MGUC management:

1. The peak day design weather criteria is 75 Corrected Degree Day Deficiency (labeled as "CDDD65" because the pivot point for determining heating degree days is set at 65 degrees Fahrenheit). In 44 years of weather history, 75 CDDD65 or colder has occurred seven times in six different winters. This represents a 6-in-44 or about a 14% chance that any given winter will have at least one occurrence.
2. The prior day design weather criteria is 68 CDDD65.
3. The peak day occurs on a weekday in January 2017.
4. When the design conditions occur, there will be a 97.5% confidence level that actual system load (GCR/GCC) experienced under design conditions will not exceed the peak day estimate. This means that if 75 CDDD65 occurs on a weekday in January 2017 with a 68 CDDD65 prior day, there is a 2.5% chance that the actual GCR/GCC load will be higher than 218,367 Mcf.

Process Used for 2015-2016

The MGUC 2016-2017 peak day planning process leveraged work and analysis done for the prior peak day estimate. Specifically, three sets of peak day regressions were performed to match the three short-term demand forecasting regions of Monroe, Coldwater, and Western Michigan. Total Throughput, End User, and GCR/GCC regressions were performed for each region (i.e., three regions multiplied by three customer classes equals nine region/class regressions).

Each region has its own dedicated daily weather data and load data automatically tracked in the TherMAXX system. The regressions used the most recent three years of daily SCADA volume data and daily weather for the three winter months of December, January, and February as long as the daily weather averaged freezing or colder (measured as 10am to 10am Eastern time 24-hour average temperature of 32 degrees Fahrenheit).

In keeping with MGUC's commitment to continuous improvement of key business practices, changes were made in the 2015-2016 peak day planning process, partly to continue implementing ideas discussed in Case Nos. U-16920 and U-17130:

> MGUC again performed a study to determine the best combination of weather, sales, and indicator variables to use for each MGUC region and customer class. The list of the explanatory variables considered is shown in the Attachments on page 6. MGUC used the SAS statistical package's "Maximum R-Squared Improvement" linear regression engine to determine the best set of explanatory variables for each of the nine region/class combinations. The MGUC 2016-2017 Peak Day Explanatory Variable Study Results Summary on page 7 of the Attachments presents the resulting nine sets of last year's best explanatory variables alongside this year's best explanatory variables and their P-Values, and provides the following insights:
>
> - The highest explanatory variable P-Value on the page is 0.03, or 3%, indicating that all of the explanatory variables provide a significant contribution to their respective regressions at a 97% confidence level. (Lower P-Values are better. A P-Value can be thought of as the probability that a given variable does not belong in the regression.) Fifty-four of the fifty-five 2016-2017 explanatory variables shown have P-Values less than 0.01, or 1%, indicating significance above a 99% confidence level.
> - Like last year, there is still support for adding a prior day weather variable to the traditional CDDD65 weather variable used in the peak day regressions for the GCR/GCC and Throughput customer classes. All twelve of the twelve best variable sets from last year and this year use a prior day weather variable for these two customer classes.
> - Like last year, there is still support for not adding a prior day weather variable to the traditional CDDD65 weather variable used in the peak day regressions for the EndUser customer classes. Only one of the six best variable sets from last year and this year use a prior day weather variable.
> - Like last year, the variables used for normalized sales were changed. Previously a unique value was used for each month. The November through March average was used for each winter to lessen any potential negative impacts of accounting or meter reading corrections. The primary intent of these variables are to measure year-over-year changes in demand that are not picked up by other variables.

Design Weather

United States local distribution companies ("LDCs") use a variety of methods to determine their peak day weather conditions. Some base their peak day analysis on the coldest temperature that has ever been experienced by the LDC. Others use a temperature that is expected to occur at least once every 5 or 10 years, and still others use a temperature expected to occur

once at least once every 20 or 30 years. Each method will result in different costs for the LDC's customers, which must be balanced against the risk of inadequate supply during extreme cold weather conditions (or the costs of procuring supply on the open market under such conditions).

In the Settlement Agreement in Case No. U-12617, MGUC's predecessor agreed that a level of 75 CDDD65 would be used for 2001. The 75 CDDD65 level was recently reaffirmed in Case No. U-15700 as being appropriate for the total MGUC system. In keeping with the process used in Case Nos. U-15700, U-16145, U-16481, U-16920, U-17130, U-17331 and U-17690, the 75 CDDD65 will be used again for 2016-2017 along with a volume risk adjustment to provide a 97.5% confidence level that actual load experienced under design conditions will not exceed the estimate.

Best Variable Sets: Pros and Cons

If each of the "best variable sets" were used, there would have been a reduction in the regression standard error, or sigma, of 38 Mcf (1%) for the End User regression, 62 Mcf (1%) for the Throughput regression, and 0 Mcf (0%) for the GCR/GCC regression (all measured against the regression with the lowest sigma for each customer group this year). Sigma reduction is generally regarded as a good thing, because the volume risk around the regression line is reduced. The benefits of reducing the volume risk must be weighed against the cost of confusion from using different weather explanatory variables and associated design criteria - thereby losing consistency of variables within customer classes or within regions, and the effects of SAS determining different "best variable sets" every year.

Conclusion

The GCR/GCC peak day estimate defines the amount of gas MGUC's firm customers will require on the day they need our service the most. Providing outstanding customer service requires being able to meet their needs even under extraordinary circumstances.

This year's explanatory variable study revealed that different sets of variables sometimes provided a better statistical "fit" to the data for a given MGUC region and customer class than the traditional CDDD65 current day weather variable. Like last year, there is still support for adding a prior day weather variable to the traditional CDDD65 variable used in the peak day regressions for the GCR/GCC and Throughput customer classes. All twelve of the twelve best variable sets from last year and this year use a prior day weather variable for these two customer classes.

MGUC has incorporated the prior day weather variable into this year's final regressions for which it is statistically significant for the GCR/GCC and Throughput customer classes. As previously discussed, MGUC retained last year's prior day weather design condition of 68 CDDD65.

Regardless of the explanatory variables used, explicitly quantifying both the volume risk and weather risk provides management and regulators with the ability to customize the resulting GCR/GCC peak day based on their risk level preferences. The current risk criteria of a 14% chance of the design 75 CDDD65 occurring at least once in any given winter coupled with a 2.5% chance that actual GCR/GCC load experienced on a 75 CDDD65 weekday with a 68 CDDD65 prior day would exceed the current estimate, provides a GCR/GCC peak day estimate of 218,367 Mcf.

Attachments

MGUC Historical Winter HDD65 and CDDD65 (1)
November to March
1971 to 2015

Date	HDD65 (1)	Average Sun	Average Wind	CDDD65	Prior Day CDDD65	Count
01/20/85	69	0	23	84.9	64.3	1
01/06/14	71	3	20	83.7	53.4	2
12/24/83	66	1	25	82.2	73.2	3
01/18/94	72	6	15	80.8	68.1	4
01/10/82	63	7	28	78.3	64.7	5
01/28/77	64	0	19	76.2	59.1	6
01/19/94	72	7	8	75.4	80.8	7
01/16/82	60	1	25	74.7	61.4	8
12/25/83	64	7	20	74.5	82.2	9
12/23/83	62	0	18	73.2	61.2	10
01/16/94	67	0	9	73.0	68.0	11
01/21/84	68	6	10	72.8	65.5	12
01/17/82	65	6	15	72.8	74.7	13
01/15/72	67	7	12	72.7	59.3	14
01/16/77	66	6	13	72.6	59.4	15
01/11/82	59	0	22	72.0	78.3	16
01/27/14	65	2	11	71.4	55.1	17
02/02/96	66	6	11	71.3	61.2	18
02/17/79	64	9	16	71.2	63.4	19
02/04/07	64	3	13	71.1	70.8	20
02/03/07	60	2	18	70.8	61.1	21
01/03/79	60	4	20	70.7	65.1	22
02/20/15	68	5	7	70.2	65.4	23
01/07/14	66	5	9	69.8	83.7	24
01/15/09	63	3	11	69.7	61.5	25

Note: 1. For peak day planning weather data prior to 1/1/1999, MGUC uses NOAA (midnight to midnight (high+low)/2) calculation for HDD based on a 4-station simple average from Monroe, Coldwater, Benton Harbor, and Grand Haven. Beginning with 1/1/1999, MGUC uses a 24-hour "gas day" hourly average of 10 am to 10 am (Eastern) from five weather stations: Monroe, Coldwater, Benton Harbor, Muskegon, and Grand Rapids weighted based on Design Day Throughput and GasDay(R) Lab Weather Station Optimization.

MGUC 2016-2017 List of Potential Peak Day Explanatory Variables

Explanatory December through February Variables Considered for Monroe, Coldwater, and Western Regions for Three Years 12/1/12 through 2/28/15.

General Variables

MoSales	Weather Normalized Historical Winter (Nov - Mar Average) Total Customer Sales for each regression region. Only tested in Throughput regressions.
MoTrans	Weather Normalized Historical Winter (Nov - Mar Average) Transportation Customer Sales (not including GCC) for each regression region. Only tested in End User regressions.
MoGCRest	Weather Normalized Historical Winter (Nov - Mar Average) GCR and GCC Customer Sales for each regression region. Only tested in GCR/GCC regressions.

"Day of" and "Prior Day" Weather Variables: Based on 24 hour "Gas Day" average

HDD65	Traditional Heating Degree Day Pivot Point 65 formula:	=MAX(0,65-AvgTemp)
AHDD65	Adjusted HDD with pivot point 65 formula:	=(MAX(0,HDD65))*((100+Windmph)/100)
HDDW65	GasDay Wind Adjusted HDD pivot point 65 formula:	CONFIDENTIAL - Developed and marketed by Marquette University GasDay Lab.
CDDD65	Traditional MGU CDDD pivot point 65 formula:	=MAX(0,(HDD65-(SunHrs/3)+(HDD65*Windmph*0.01)))
WCHDD65	HDD based on Windchill at pivot point 65 formula:	=MAX(0,65-Windchill)
AHDD60	Adjusted HDD with pivot point 60 formula:	=(MAX(0,HDD60))*((100+Windmph)/100)
HDDW60	GasDay Wind Adjusted HDD pivot point 60 formula:	CONFIDENTIAL - Developed and marketed by Marquette University GasDay Lab.
CDDD60	Traditional MGU CDDD pivot point 60 formula:	=MAX(0,(HDD60-(SunHrs/3)+(HDD60*Windmph*0.01)))
AHDD55	Adjusted HDD with pivot point 55 formula:	=(MAX(0,HDD55))*((100+Windmph)/100)
HDDW55	GasDay Wind Adjusted HDD pivot point 55 formula:	CONFIDENTIAL - Developed and marketed by Marquette University GasDay Lab.
CDDD55	Traditional MGU CDDD pivot point 55 formula:	=MAX(0,(HDD55-(SunHrs/3)+(HDD55*Windmph*0.01)))

Binary Indicator Variables

Daytype	Used to isolate the effects of weekends on customer demand. Causal basis is that industrials and some commercials run fewer hours or partial shifts Friday, Saturday, or Sunday.
Month	Adjust for the commercial and industrial practice of tending to be open more (or less) hours per day on average in December, January, or February.

National Weather Service 2001/2002 Windchill formula: =IF(AvgTemp<50,IF(Windmph>3,(35.74+(0.6215*AvgTemp)-(35.75*Windmph^0.16)+(0.4275*AvgTemp*Windmph^0.16)),AvgTemp),AvgTemp)

MGUC 2016-2017 Peak Day Explanatory Variable Study Results Summary

Selecting the Best Variable Sets for Each Region and Customer Class

Best Variables for Western:

GCR/GCC			End User			Throughput		
Last Yr	**2016-2017**	**P-Value**	**Last Yr**	**2016-2017**	**P-Value**	**Last Yr**	**2016-2017**	**P-Value**
Intercept	Intercept	0.00	Intercept	Intercept	0.00	Intercept	Intercept	0.00
CDDD65	CDDD65	0.00	WCHDD65	WCHDD65	0.00	CDDD65	CDDD65	0.00
HDDW65-1	HDDW65-1	0.00				HDDW65-1	HDDW65-1	0.00
			Fri	Fri	0.00	Fri	Fri	0.00
Sat	Sat	0.00	Sat	Sat	0.00	Sat	Sat	0.00
	Sun	0.00	Sun	Sun	0.00	Sun	Sun	0.00
Dec	Dec	0.00	Dec	Dec	0.00	Dec	Dec	0.00
MonGCRest	MonGCRest	0.00	MonTrans	MonTrans	0.00	MonSales	MonSales	0.00

Best Variables for Coldwater:

GCR/GCC			End User			Throughput		
Last Yr	**2016-2017**	**P-Value**	**Last Yr**	**2016-2017**	**P-Value**	**Last Yr**	**2016-2017**	**P-Value**
Intercept	Intercept	0.00	Intercept	Intercept	0.00	Intercept	Intercept	0.00
CDDD65	HDDW65	0.00		CDDD55	0.00	CDDD65	CDDD65	0.00
HDDW65-1	HDDW55-1	0.00	WCHDD65-1			CDDD65-1	AHDD55-1	0.00
			Fri			Fri	Fri	0.00
Sat			Sat	Sat	0.00	Sat	Sat	0.00
			Sun	Sun	0.00	Sun	Sun	0.00
Feb			Dec	Dec	0.00	Dec	Dec	0.00
MonGCRest	MonGCRest	0.00	Feb			MonSales	MonSales	0.00
			MonTrans					

Best Variables for Monroe:

GCR/GCC			End User			Throughput		
Last Yr	**2016-2017**	**P-Value**	**Last Yr**	**2016-2017**	**P-Value**	**Last Yr**	**2016-2017**	**P-Value**
Intercept	Intercept	0.00	Intercept	Intercept	0.03	Intercept	Intercept	0.00
CDDD65	HDDW65	0.00	WCHDD65	CDDD65	0.00	CDDD65	HDDW65	0.00
AHDD65-1	CDDD65-1	0.00		HDD65-1	0.00	WCHDD65-1	AHDD65-1	0.00
			Fri	Fri	0.00	Fri	Dec	0.00
			Sat	Sat	0.00	Sat		
			Sun	Sun	0.00	Sun		
Dec			Dec	Dec	0.00	Dec		
				Feb	0.00			
			MonTrans	MonTrans	0.00	MonSales		

MGUC - GCR/GCC Peak Day Regression for Winter 2016-2017 - Summary of Three Region Regressions
Based on December through February Freezing or Colder Daily Data for 12/1/2012 through 2/28/2015
Volumes in Mcf

Western GCR/GCC Regression	Weather Variable Current Day	Weather Variable Prior Day	Weather Current Day	Weather Prior Day	Intercept	Use Per Current Day	Use Per Prior Day	Adj R Sq.	Sigma		50% Point Est	Risk Adjusted Confidence Levels 95% Conf. Level	97.50% Conf. Level	99% Conf. Level
Last Year: CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	7,826.83	1,159.75	183.89	96%	2,337.93		107,313	111,158	111,895	112,751
S	CDDD65	HDDW65	75.00	64.49	5,156.44	1,215.99	192.31	97%	2,294.48		108,757	112,532	113,255	114,095
CDDD65+S	CDDD65	HDDW65	75.00	64.49	5,156.44	1,215.99	192.31	97%	2,294.48		108,757	112,532	113,255	114,095
CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	5,320.93	1,214.84	179.59	97%	2,308.49	0	108,646	112,443	113,170	114,016
CDDD65+S (No Lag)	CDDD65		75.00	0.00	7,937.21	1,330.56	0.00	96%	2,688.91		107,729	112,152	112,999	113,984
CDDD65	CDDD65		75.00	0.00	4,708.73	1,410.36	0.00	95%	3,041.63		110,486	115,489	116,447	117,562
HDD65	HDD65		69.40	0.00	3,751.99	1,553.09	0.00	89%	4,382.26		111,537	118,745	120,126	121,732
Coldwater GCR/GCC Regression														
Last Year: CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	(2,317.96)	414.15	130.63	92%	1,527.57		37,626	40,138	40,620	41,179
S	HDDW65	HDDW55	70.80	54.29	832.24	432.98	90.67	94%	1,383.76		36,408	38,684	39,120	39,627
CDDD65+S	CDDD65	HDDW65	75.00	64.49	7.81	410.45	91.51	93%	1,430.54		36,693	39,046	39,497	40,021
CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	1,924.63	389.71	80.27	94%	1,338.26	0	36,611	38,813	39,234	39,725
CDDD65+S (No Lag)	CDDD65		75.00	0.00	2,633.44	446.84	0.00	92%	1,562.07		36,146	38,716	39,208	39,780
CDDD65	CDDD65		75.00	0.00	1,649.00	507.92	0.00	85%	2,105.79		39,743	43,206	43,870	44,641
HDD65	HDD65		69.40	0.00	1,331.83	544.34	0.00	84%	2,192.97		39,109	42,716	43,407	44,211
Monroe GCR/GCC Regression														
Last Year: CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	7,033.96	599.13	159.81	95%	1,645.25		62,836	65,542	66,060	66,663
S	HDDW65	CDDD65	70.80	68.00	6,487.23	631.51	144.39	93%	1,978.01		61,015	64,269	64,892	65,617
CDDD65+S	CDDD65	HDDW65	75.00	64.49	6,164.01	605.36	161.30	93%	1,972.69		61,968	65,213	65,835	66,557
CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	6,228.85	601.63	157.79	93%	1,980.15	0	62,081	65,338	65,962	66,688
CDDD65+S (No Lag)	CDDD65		75.00	0.00	8,455.57	709.28	0.00	89%	2,432.29		61,651	65,652	66,418	67,310
CDDD65	CDDD65		75.00	0.00	8,455.57	709.28	0.00	89%	2,432.29		61,651	65,652	66,418	67,310
HDD65	HDD65		69.40	0.00	7,871.91	754.84	0.00	85%	2,826.79		60,258	64,908	65,799	66,834
Total GCR/GCC Regression														
Last Year: CDDD65, CDDD65-1+S					12,542.83	2,173.02	474.33	95%	5,510.75		207,774	216,838	218,575	220,594
S					12,475.90	2,280.48	427.38	95%	5,656.24		206,180	215,484	217,266	219,339
CDDD65+S					11,328.26	2,231.81	445.12	95%	5,697.71		207,419	216,791	218,586	220,674
CDDD65, CDDD65-1+S					13,474.41	2,206.18	417.66	95%	5,626.91		207,338	216,594	218,367	220,429
CDDD65+S (No Lag)					19,026.22	2,486.67		93%	6,683.27		205,526	216,519	218,625	221,074
CDDD65					14,813.30	2,627.55		91%	7,579.71		211,880	224,347	226,736	229,513
HDD65					12,955.73	2,852.26		87%	9,402.01		210,905	226,370	229,332	232,777
% Change from Last Year									2%				-0.1%	
Change from Last Year									116				(208)	
% Change from "Best Variable Sets"									-1%					
Change from "Best Variable Sets"									(29)					
% Portion of the Total Sendout											78.3%		78.3%	

MGUC - End User Peak Day Regression for Winter 2016-2017 - Summary of Three Region Regressions
Based on December through February Freezing or Colder Daily Data for 12/1/2012 through 2/28/2015
Volumes in Mcf

Western End User Regression	Weather Variable Current Day	Weather Variable Prior Day	Weather Current Day	Weather Prior Day	Intercept	Use Per Current Day	Use Per Prior Day	Adj R Sq.	Sigma	50% Point Est	Risk Adjusted Confidence Levels 95% Conf. Level	97.50% Conf. Level	99% Conf. Level
Last Year: CDDD65+S (No Lag)	CDDD65		75.00		13,108.21	131.22		64%	2,200.99	22,950	26,570	27,264	28,070
S	WCHDD65	0	86.04	0.00	18,410.00	78.24	0.00	62%	2,196.54	25,142	28,755	29,448	30,252
CDDD65+S	CDDD65	0	75.00	0.00	18,603.22	84.87	0.00	62%	2,202.53	24,968	28,591	29,285	30,092
CDDD65, CDDD65-1+S (No Intercep	CDDD65	CDDD65	75.00	68.00	0.00	271.04	88.14	96%	3,441.55	26,322	31,982	33,067	34,328
CDDD65+S (No Lag)	CDDD65	0	75.00	0.00	18,603.22	84.87	0.00	62%	2,202.53	24,968	28,591	29,285	30,092
CDDD65	CDDD65		75.00	0.00	8,492.69	187.52	0.00	23%	3,142.14	22,557	27,725	28,715	29,867
HDD65	HDD65		69.40	0.00	8,267.24	208.70	0.00	22%	3,160.50	22,751	27,950	28,946	30,103
Coldwater End User Regression													
Last Year: CDDD65+S (No Lag)	CDDD65		75.00		10,716.37	24.49		82%	705.18	12,553	13,713	13,935	14,194
S	CDDD55	0	64.04	0.00	7,542.73	67.56	0.00	63%	1,162.76	11,869	13,782	14,148	14,574
CDDD65+S	CDDD65	0	75.00	0.00	6,836.32	67.05	0.00	63%	1,163.51	11,865	13,779	14,146	14,572
CDDD65, CDDD65-1+S (No Interc)	CDDD65	CDDD65	75.00	68.00	0.00	150.38	35.30	96%	1,787.16	13,679	16,619	17,182	17,837
CDDD65+S (No Lag)	CDDD65	0	75.00	0.00	6,836.32	67.05	0.00	63%	1,163.51	11,865	13,779	14,146	14,572
CDDD65	CDDD65		75.00	0.00	4,191.98	101.54	0.00	28%	1,614.63	11,808	14,464	14,972	15,564
HDD65	HDD65		69.40	0.00	4,075.22	109.99	0.00	29%	1,612.41	11,708	14,360	14,869	15,459
Monroe End User Regression													
Last Year: CDDD65+S (No Lag)	CDDD65		75.00		9,471.64	48.00		65%	1,247.19	13,072	15,123	15,516	15,973
S	CDDD65	HDD65	75.00	63.22	5,811.76	67.22	35.11	67%	1,325.53	13,073	15,253	15,671	16,156
CDDD65+S	CDDD65	HDD65	75.00	63.22	5,811.76	67.22	35.11	67%	1,325.53	13,073	15,253	15,671	16,156
CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	6,041.26	65.60	30.83	67%	1,333.80	13,058	15,252	15,672	16,161
CDDD65+S (No Lag)	CDDD65	0	75.00	0.00	6,658.04	84.49	0.00	65%	1,357.17	12,995	15,227	15,655	16,152
CDDD65	CDDD65		75.00	0.00	2,360.98	138.28	0.00	35%	1,863.52	12,732	15,797	16,384	17,067
HDD65	HDD65		69.40	0.00	1,802.83	156.87	0.00	38%	1,818.25	12,690	15,680	16,253	16,919
Total End User Regression													
Last Year: CDDD65+S (No Lag)					33,296.21	203.72		69%	4,153.36	48,575	55,407	56,716	58,237
S					31,764.49	213.03		64%	4,684.82	50,084	57,790	59,267	60,983
CDDD65+S					31,251.30	219.14	35.11	64%	4,691.57	49,906	57,623	59,101	60,820
CDDD65, CDDD65-1+S					6,041.26	487.03	154.28	89%	6,562.51	53,059	63,853	65,921	68,326
CDDD65+S (No Lag)					32,097.58	236.41		63%	4,723.21	49,828	57,597	59,086	60,816
CDDD65					15,045.65	427.34		27%	6,620.29	47,096	57,986	60,072	62,498
HDD65					14,145.29	475.55		28%	6,591.16	47,149	57,990	60,067	62,482
% Change from Last Year									14%			4.2%	
Change from Last Year									570			2,370	
% Change from "Best Variable Sets"									1%				
Change from "Best Variable Sets"									38				

MGUC - Throughput Peak Day Regression for Winter 2016-2017 - Summary of Three Region Regressions
Based on December through February Freezing or Colder Daily Data for 12/1/2012 through 2/28/2015
Volumes in Mcf

Western Throughput Regression	Weather Variable Current Day	Weather Variable Prior Day	Weather Current Day	Weather Prior Day	Intercept	Use Per Current Day	Use Per Prior Day	Adj R Sq.	Sigma	50% Point Est	Risk Adjusted Confidence Levels 95% Conf. Level	97.50% Conf. Level	99% Conf. Level
Last Year: CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	21,716.40	1,255.56	210.74	96%	3,058.82	130,214	135,245	136,209	137,330
S	CDDD65	HDDW65	75.00	64.49	22,625.13	1,299.50	202.94	96%	3,048.74	133,175	138,190	139,150	140,267
CDDD65+S	CDDD65	HDDW65	75.00	64.49	22,625.13	1,299.50	202.94	96%	3,048.74	133,175	138,190	139,150	140,267
CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	22,844.50	1,297.82	190.31	96%	3,057.62	133,122	138,151	139,115	140,235
CDDD65+S (No Lag)	CDDD65		75.00	0.00	26,127.79	1,423.53	0.00	95%	3,387.27	132,892	138,464	139,531	140,772
CDDD65	CDDD65		75.00	0.00	13,201.42	1,597.88	0.00	90%	4,859.95	133,043	141,037	142,568	144,349
HDD65	HDD65		69.40	0.00	12,019.23	1,761.78	0.00	85%	5,990.30	134,288	144,141	146,029	148,224
Coldwater Throughput Regression													
Last Year: CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	11,846.78	401.45	129.29	95%	1,452.61	50,748	53,137	53,595	54,127
S	CDDD65	AHDD55	75.00	58.33	18,711.48	439.06	94.57	95%	1,581.85	57,157	59,759	60,257	60,837
CDDD65+S	CDDD65	AHDD55	75.00	58.33	18,711.48	439.06	94.57	95%	1,581.85	57,157	59,759	60,257	60,837
CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	18,239.94	438.07	89.82	95%	1,603.94	57,203	59,841	60,347	60,934
CDDD65+S (No Lag)	CDDD65		75.00	0.00	19,881.61	497.57	0.00	93%	1,830.86	57,200	60,211	60,788	61,459
CDDD65	CDDD65		75.00	0.00	5,840.98	609.46	0.00	80%	3,033.98	51,550	56,541	57,497	58,609
HDD65	HDD65		69.40	0.00	5,407.05	654.32	0.00	79%	3,100.37	50,818	55,917	56,894	58,030
Monroe Throughput Regression													
Last Year: CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	16,645.36	634.18	163.62	94%	2,152.23	75,335	78,875	79,553	80,342
S	HDDW65	AHDD65	70.80	69.29	10,820.28	721.69	163.95	93%	2,437.97	73,274	77,284	78,052	78,945
CDDD65+S	CDDD65	AHDD65	75.00	69.29	10,599.87	684.75	180.58	93%	2,450.98	74,468	78,500	79,272	80,170
CDDD65, CDDD65-1+S	CDDD65	CDDD65	75.00	68.00	10,854.98	680.24	185.28	92%	2,468.63	74,472	78,533	79,311	80,215
CDDD65+S (No Lag)	CDDD65		75.00	0.00	14,209.48	795.23	0.00	89%	2,958.45	73,852	78,718	79,650	80,734
CDDD65	CDDD65		75.00	0.00	10,816.54	847.55	0.00	87%	3,297.96	74,383	79,808	80,847	82,055
HDD65	HDD65		69.40	0.00	9,674.74	911.71	0.00	85%	3,517.70	72,948	78,734	79,842	81,131
Total Throughput Regression													
Last Year: CDDD65, CDDD65-1+S					50,208.55	2,291.19	503.66	95%	6,663.65	256,296	267,257	269,357	271,798
S					52,156.89	2,460.24	461.45	95%	7,068.56	263,605	275,232	277,459	280,049
CDDD65+S					51,936.48	2,423.30	478.09	95%	7,081.57	264,800	276,448	278,680	281,274
CDDD65, CDDD65-1+S					51,939.42	2,416.14	465.41	95%	7,130.19	264,797	276,526	278,772	281,385
CDDD65+S (No Lag)					60,218.89	2,716.33		93%	8,176.58	263,944	277,393	279,969	282,965
CDDD65					29,858.94	3,054.90		87%	11,191.90	258,976	277,385	280,912	285,012
HDD65					27,101.02	3,327.81		84%	12,608.37	258,054	278,793	282,766	287,385

% Change from Last Year	7%	3.5%
Change from Last Year	467	9,416
% Change from "Best Variable Sets"	1%	
Change from "Best Variable Sets"	62	

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
Volatility Calculation

Case No.: U-17940
Exhibit: A-12 (JPW-2)
Page 1 of 20
Witness: John P Wirick Jr

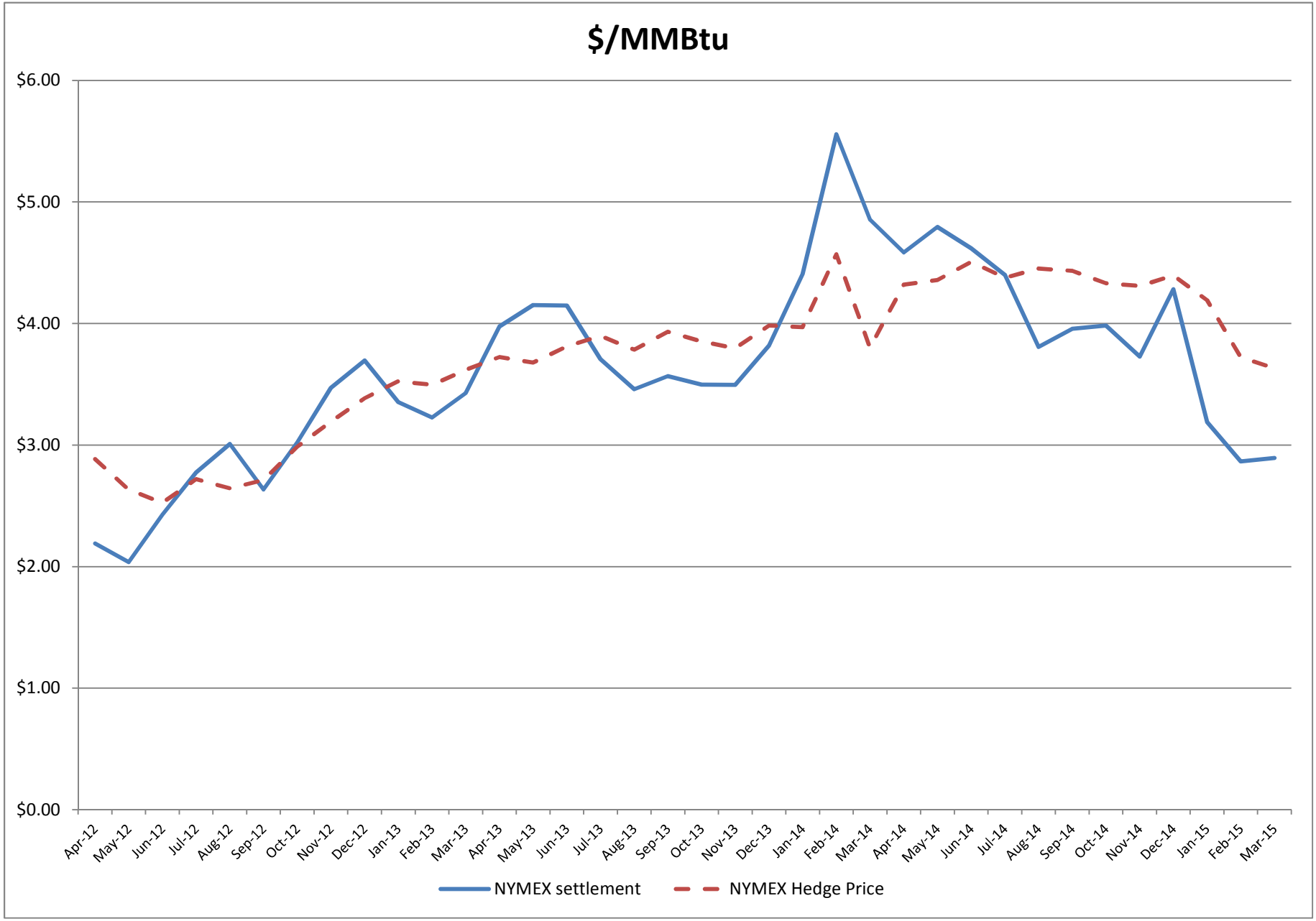
Line	DESCRIPTION	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
	Gas Quantities (MMBtu)															
1	Purchased	928,710	1,068,167	1,033,710	1,059,611	1,059,611	919,800	1,059,611	1,055,430	1,651,638	1,780,357	1,603,407	1,801,711	1,329,916	1,439,699	1,139,837
2	Produced	19,396	67,459	65,313	57,105	63,360	6,694	7,955	16,973	27,582	40,897	42,628	52,697	8,816	6,482	6,985
3	Purchased and Produced	948,106	1,135,626	1,099,023	1,116,716	1,122,971	926,494	1,067,566	1,072,403	1,679,220	1,821,254	1,646,035	1,854,408	1,338,732	1,446,181	1,146,822
4	Hedges	140,000	140,000	140,000	140,000	140,000	140,000	140,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
5	Actual Hedge %	15%	12%	13%	13%	12%	15%	13%	21%	13%	12%	13%	12%	16%	15%	19%
	Cost of Gas ($)															
6	Purchased	$1,846,656	$2,037,435	$2,455,091	$2,791,364	$3,110,304	$2,315,316	$2,998,943	$3,579,471	$6,088,169	$6,050,385	$5,338,233	$6,329,412	$5,267,106	$5,961,305	$4,624,704
7	Produced	$41,469	$133,107	$153,051	$150,136	$188,317	$17,544	$23,922	$60,387	$103,650	$136,191	$136,947	$177,864	$35,481	$27,378	$29,534
8	Purchased and Produced	$1,888,125	$2,170,542	$2,608,141	$2,941,500	$3,298,621	$2,332,860	$3,022,865	$3,639,858	$6,191,818	$6,186,576	$5,475,179	$6,507,275	$5,302,588	$5,988,683	$4,654,238
9	Futures Loss / (Gain)	$88,680	$75,350	$9,760	($12,140)	($48,090)	$3,010	($12,100)	($56,930)	($65,110)	$23,770	$43,730	$26,390	($54,840)	($94,050)	($71,280)
10	Options Loss / (Gain)	$8,310	$8,240	$3,560	$4,490	($3,180)	$8,000	$6,870	($4,140)	($3,120)	$14,030	$15,290	$15,580	($550)	($10,020)	($2,750)
11	Hedges Loss / (Gain)	$96,990	$83,590	$13,320	($7,650)	($51,270)	$11,010	($5,230)	($61,070)	($68,230)	$37,800	$59,020	$41,970	($55,390)	($104,070)	($74,030)
12	Purchased and Produced w/ Hedges	$1,985,115	$2,254,132	$2,621,461	$2,933,850	$3,247,351	$2,343,870	$3,017,635	$3,578,788	$6,123,588	$6,224,376	$5,534,199	$6,549,245	$5,247,198	$5,884,613	$4,580,208
	Cost of Gas ($/MMBtu)															
13	NYMEX settlement	$ 2.19	$ 2.04	$ 2.43	$ 2.77	$ 3.01	$ 2.63	$ 3.02	$ 3.47	$ 3.70	$ 3.35	$ 3.23	$ 3.43	$ 3.98	$ 4.15	$ 4.15
14	Hedges Loss or (Gain) / Hedges	$ 0.69	$ 0.60	$ 0.10	$ (0.05)	$ (0.37)	$ 0.08	$ (0.04)	$ (0.28)	$ (0.31)	$ 0.17	$ 0.27	$ 0.19	$ (0.25)	$ (0.47)	$ (0.34)
15	NYMEX Hedge Price	$ 2.88	$ 2.63	$ 2.52	$ 2.72	$ 2.64	$ 2.71	$ 2.99	$ 3.19	$ 3.39	$ 3.53	$ 3.49	$ 3.62	$ 3.72	$ 3.68	$ 3.81
16	Purchased and Produced	$ 1.99	$ 1.91	$ 2.37	$ 2.63	$ 2.94	$ 2.52	$ 2.83	$ 3.39	$ 3.69	$ 3.40	$ 3.33	$ 3.51	$ 3.96	$ 4.14	$ 4.06
17	Hedges Loss or Gain / Purchased and Produced	$ 0.10	$ 0.07	$ 0.01	$ (0.01)	$ (0.05)	$ 0.01	$ (0.00)	$ (0.06)	$ (0.04)	$ 0.02	$ 0.04	$ 0.02	$ (0.04)	$ (0.07)	$ (0.06)
18	Purchased and Produced w/ Hedges	$ 2.09	$ 1.98	$ 2.39	$ 2.63	$ 2.89	$ 2.53	$ 2.83	$ 3.34	$ 3.65	$ 3.42	$ 3.36	$ 3.53	$ 3.92	$ 4.07	$ 3.99
	% Change in Cost of Gas															
19	NYMEX settlement		-7%	18%	13%	8%	-13%	14%	14%	6%	-10%	-4%	6%	15%	4%	0%
20	Purchased and Produced		-4%	22%	10%	11%	-15%	12%	18%	8%	-8%	-2%	5%	12%	4%	-2%
21	Purchased and Produced w/ Hedges		-5%	18%	10%	10%	-13%	11%	17%	9%	-6%	-2%	5%	10%	4%	-2%
	% Change in Volatility															
22	(Purchased and Produced w/ Hedges) / (Purchased and Produced) -1															

Line	DESCRIPTION	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14
	(a)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)	(aa)	(ab)	(ac)	(ad)
	Gas Quantities (MMBtu)														
1	Purchased	1,049,068	1,034,938	1,271,071	1,403,341	953,080	1,979,328	2,574,932	2,274,432	1,854,779	1,412,284	1,371,657	1,356,635	1,247,614	893,485
2	Produced	5,231	5,566	4,851	5,976	5,730	4,393	4,648	3,078	3,777	4,775	5,415	5,520	5,506	5,096
3	Purchased and Produced	1,054,299	1,040,504	1,275,922	1,409,317	958,810	1,983,721	2,579,580	2,277,510	1,858,556	1,417,059	1,377,072	1,362,155	1,253,120	898,581
4	Hedges	220,000	220,000	220,000	220,000	240,000	240,000	240,000	240,000	240,000	230,000	230,000	230,000	230,000	230,000
5	Actual Hedge %	21%	21%	17%	16%	25%	12%	9%	11%	13%	16%	17%	17%	18%	26%
	Cost of Gas ($)														
6	Purchased	$ 3,693,741	$ 3,460,902	$ 4,427,581	$ 4,839,113	$ 3,403,703	$ 7,434,572	$ 12,923,130	$ 16,674,963	$ 10,071,181	$6,567,543	$6,347,682	$6,071,025	$5,383,367	$3,300,551
7	Produced	$ 19,250	$ 19,537	$ 17,501	$ 20,882	$ 19,826	$ 16,212	$ 20,823	$ 20,684	$ 42,151	$23,875	$25,667	$25,613	$24,502	$19,059
8	Purchased and Produced	$3,712,991	$3,480,439	$4,445,082	$4,859,995	$3,423,529	$7,450,784	$12,943,954	$16,695,647	$10,113,332	$6,591,418	$6,373,349	$6,096,638	$5,407,868	$3,319,610
9	Futures Loss / (Gain)	$35,860	$64,840	$71,510	$70,300	$61,210	$29,380	($94,570)	($195,430)	($194,930)	($56,070)	($85,030)	($30,610)	($14,540)	$133,420
10	Options Loss / (Gain)	$6,160	$6,910	$8,700	$7,920	$10,690	$10,280	($10,530)	($41,610)	($58,050)	($4,550)	($15,660)	$5,030	$9,210	$14,890
11	Hedges Loss / (Gain)	$42,020	$71,750	$80,210	$78,220	$71,900	$39,660	($105,100)	($237,040)	($252,980)	($60,620)	($100,690)	($25,580)	($5,330)	$148,310
12	Purchased and Produced w/ Hedges	$3,755,011	$3,552,189	$4,525,292	$4,938,215	$3,495,429	$7,490,444	$12,838,854	$16,458,607	$9,860,352	$6,530,798	$6,272,659	$6,071,058	$5,402,538	$3,467,920
	Cost of Gas ($/MMBtu)														
13	NYMEX settlement	$ 3.71	$ 3.46	$ 3.57	$ 3.50	$ 3.50	$ 3.82	$ 4.41	$ 5.56	$ 4.86	$ 4.584	$ 4.795	$ 4.619	$ 4.400	$ 3.808
14	Hedges Loss or (Gain) / Hedges	$ 0.19	$ 0.33	$ 0.36	$ 0.36	$ 0.30	$ 0.17	$ (0.44)	$ (0.99)	$ (1.05)	$ (0.26)	$ (0.44)	$ (0.11)	$ (0.02)	$ 0.64
15	NYMEX Hedge Price	$ 3.90	$ 3.79	$ 3.93	$ 3.85	$ 3.80	$ 3.98	$ 3.97	$ 4.57	$ 3.80	$ 4.32	$ 4.36	$ 4.51	$ 4.38	$ 4.45
16	Purchased and Produced	$ 3.52	$ 3.34	$ 3.48	$ 3.45	$ 3.57	$ 3.76	$ 5.02	$ 7.33	$ 5.44	$ 4.65	$ 4.63	$ 4.48	$ 4.32	$ 3.69
17	Hedges Loss or Gain / Purchased and Produced	$ 0.04	$ 0.07	$ 0.06	$ 0.06	$ 0.07	$ 0.02	$ (0.04)	$ (0.10)	$ (0.14)	$ (0.04)	$ (0.07)	$ (0.02)	$ (0.00)	$ 0.17
18	Purchased and Produced w/ Hedges	$ 3.56	$ 3.41	$ 3.55	$ 3.50	$ 3.65	$ 3.78	$ 4.98	$ 7.23	$ 5.31	$ 4.61	$ 4.56	$ 4.46	$ 4.31	$ 3.86
	% Change in Cost of Gas														
19	NYMEX settlement	-11%	-7%	3%	-2%	0%	9%	14%	23%	-14%	-6%	5%	-4%	-5%	-14%
20	Purchased and Produced	-14%	-5%	4%	-1%	3%	5%	29%	38%	-30%	-16%	-1%	-3%	-4%	-16%
21	Purchased and Produced w/ Hedges	-11%	-4%	4%	-1%	4%	4%	28%	37%	-31%	-14%	-1%	-2%	-3%	-11%
	% Change in Volatility														
22	(Purchased and Produced w/ Hedges) / (Purchased and Produced) -1														

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION
Volatility Calculation

Case No.: U-17940
Exhibit: A-12 (JPW-2)
Page 3 of 20
Witness: John P Wirick Jr

Line	DESCRIPTION (a)	Sep-14 (ae)	Oct-14 (af)	Nov-14 (ag)	Dec-14 (ah)	Jan-15 (ai)	Feb-15 (aj)	Mar-15 (ak)	Total (al)	Volatiltiy (am)	Line
	Gas Quantities (MMBtu)										
1	Purchased	1,413,479	1,495,207	1,229,456	1,847,268	2,318,967	2,298,099	2,028,036	52,238,371		1
2	Produced	4,782	5,632	4,272	4,693	4,643	2,703	4,990	591,619		2
3	Purchased and Produced	1,418,261	1,500,839	1,233,728	1,851,961	2,323,610	2,300,802	2,033,026	52,829,990		3
4	Hedges	230,000	230,000	250,000	250,000	250,000	250,000	250,000	7,680,000		4
5	Actual Hedge %	16%	15%	20%	13%	11%	11%	12%	14.5%		5
	Cost of Gas ($)										
6	Purchased	$5,525,959	$5,835,205	$4,708,888	$7,964,276	$7,414,095	$6,904,469	$6,029,495	$199,775,334		6
7	Produced	$18,411	$21,627	$15,636	$21,916	$14,997	$7,460	$16,317	$1,846,923		7
8	Purchased and Produced	$5,544,369	$5,856,832	$4,724,523	$7,986,193	$7,429,092	$6,911,929	$6,045,813	$201,622,256		8
9	Futures Loss / (Gain)	$96,410	$67,950	$132,590	$26,130	$234,340	$196,710	$164,180	$569,800		9
10	Options Loss / (Gain)	$13,240	$11,730	$12,660	$2,260	$16,100	$17,470	$20,180	$103,640		10
11	Hedges Loss / (Gain)	$109,650	$79,680	$145,250	$28,390	$250,440	$214,180	$184,360	$673,440		11
12	Purchased and Produced w/ Hedges	$5,654,019	$5,936,512	$4,869,773	$8,014,583	$7,679,532	$7,126,109	$6,230,173	$202,295,696		12
	Cost of Gas ($/MMBtu)										
13	NYMEX settlement	$ 3.957	$ 3.984	$ 3.728	$ 4.282	$ 3.189	$ 2.87	$ 2.89			13
14	Hedges Loss or (Gain) / Hedges	$ 0.48	$ 0.35	$ 0.58	$ 0.11	$ 1.00	$ 0.86	$ 0.74	$ 0.09		14
15	NYMEX Hedge Price	$ 4.43	$ 4.33	$ 4.31	$ 4.40	$ 4.19	$ 3.72	$ 3.63			15
16	Purchased and Produced	$ 3.91	$ 3.90	$ 3.83	$ 4.31	$ 3.20	$ 3.00	$ 2.97	$ 3.82		16
17	Hedges Loss or Gain / Purchased and Produced	$ 0.08	$ 0.05	$ 0.12	$ 0.02	$ 0.11	$ 0.09	$ 0.09	$ 0.01		17
18	Purchased and Produced w/ Hedges	$ 3.99	$ 3.96	$ 3.95	$ 4.33	$ 3.31	$ 3.10	$ 3.06	$ 3.83		18
	% Change in Cost of Gas										
19	NYMEX settlement	4%	1%	-7%	14%	-29%	-11%	1%		38.9%	19
20	Purchased and Produced	6%	0%	-2%	12%	-30%	-6%	-1%		48.9%	20
21	Purchased and Produced w/ Hedges	3%	-1%	0%	9%	-27%	-6%	-1%		45.5%	21
	% Change in Volatility										
22	(Purchased and Produced w/ Hedges) / (Purchased and Produced) -1									-7.0%	22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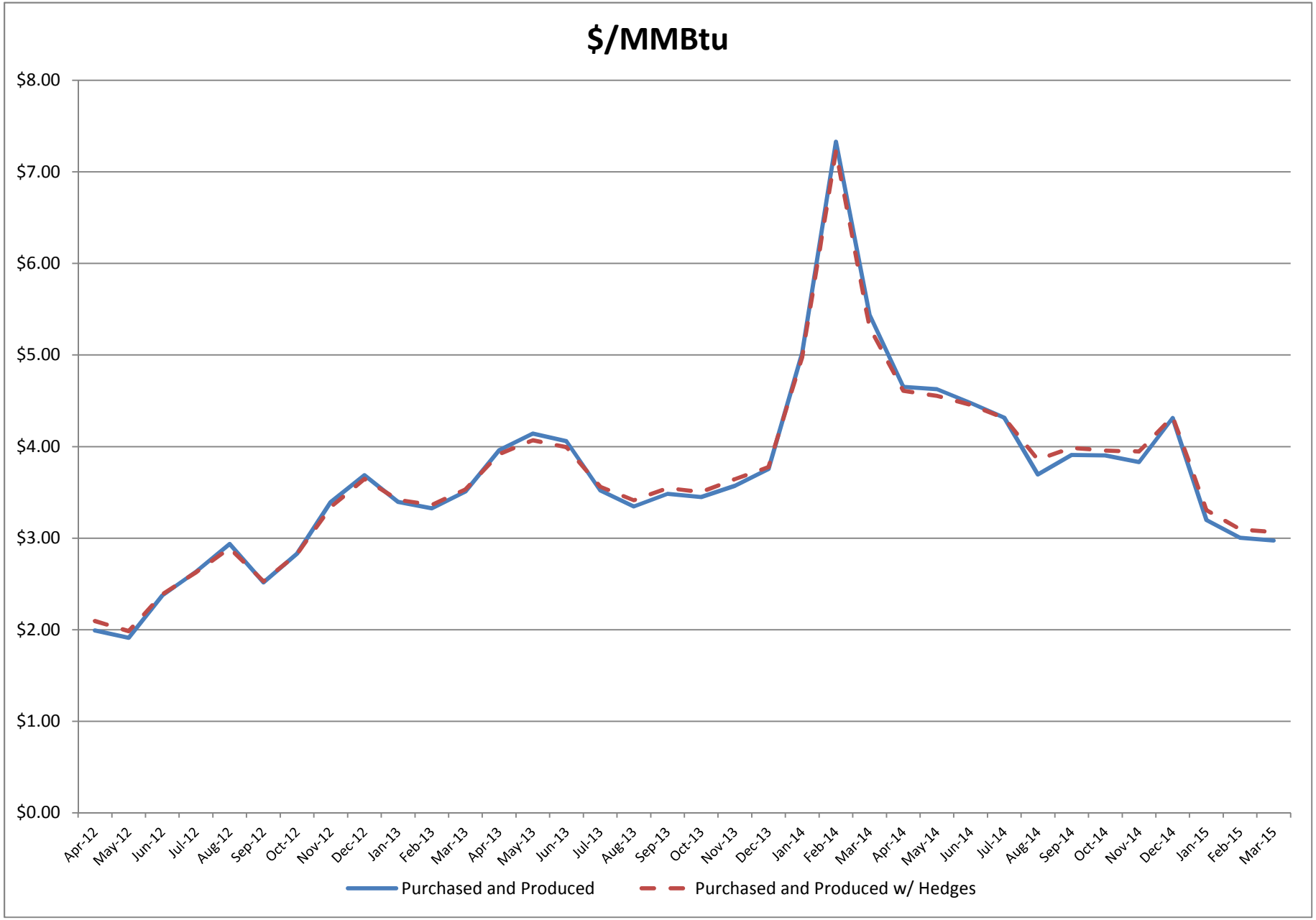
NYMEX settlement
NYMEX Hedge Price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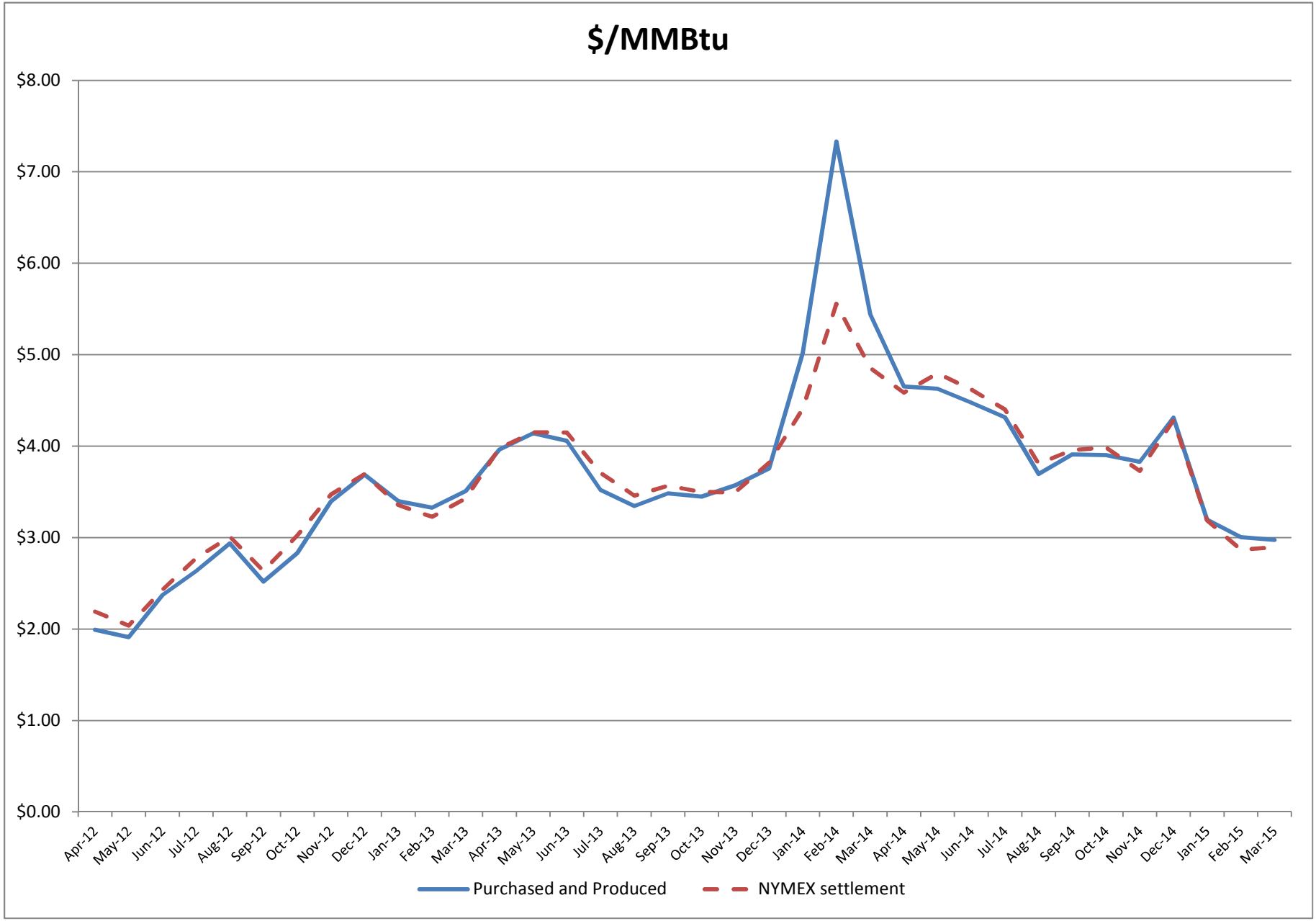
Purchased and Produced
Purchased and Produced w/ Hedges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Purchased and Produced
NYMEX settlement

MGU Gas Futures and Options Summary Report
as of 11/30/15

12/1/2015	OPTIONS					FUTURES					TOTAL						
NYMEX Contract Month	Volumes	Realized Gain/(Loss)	Unrealized Gain/(Loss)	# Realized Hedges	# Unrealized Hedges	Volumes	Realized Gain/(Loss)	Unrealized Gain/(Loss)	# Realized Hedges	# Unrealized Hedges	Volume	Broker Fees	Realized Gain/(Loss)	Unrealized Gain/(Loss)	Total G/L	# Realized Hedges	# Unrealized Hedges
Apr-14	0	$4,550	$0	6	-	0	$56,070	$0	17	-	0	($480)	$60,620	$0	$60,620	23	-
May-14	0	$15,660	$0	6	-	0	$85,030	$0	17	-	0	($460)	$100,690	$0	$100,690	23	-
Jun-14	0	($5,030)	$0	6	-	0	$30,610	$0	17	-	0	($450)	$25,580	$0	$25,580	23	-
Jul-14	0	($9,210)	$0	6	-	0	$14,540	$0	17	-	0	($420)	$5,330	$0	$5,330	23	-
Aug-14	0	($14,890)	$0	6	-	0	($133,420)	$0	17	-	0	($601)	($148,310)	$0	($148,310)	23	-
Sep-14	0	($13,240)	$0	6	-	0	($96,410)	$0	17	-	0	($581)	($109,650)	$0	($109,650)	23	-
Oct-14	0	($11,730)	$0	6	-	0	($67,950)	$0	17	-	0	($561)	($79,680)	$0	($79,680)	23	-
Nov-14	0	($12,660)	$0	6	-	0	($132,590)	$0	19	-	0	($591)	($145,250)	$0	($145,250)	25	-
Dec-14	0	($2,260)	$0	6	-	0	($26,130)	$0	19	-	0	($511)	($28,390)	$0	($28,390)	25	-
Jan-15	0	($16,100)	$0	6	-	0	($234,340)	$0	19	-	0	($480)	($250,440)	$0	($250,440)	25	-
Feb-15	0	($17,470)	$0	6	-	0	($196,710)	$0	19	-	0	($470)	($214,180)	$0	($214,180)	25	-
Mar-15	0	($20,180)	$0	6	-	0	($164,180)	$0	19	-	0	($390)	($184,360)	$0	($184,360)	25	-
Apr-15	0	($12,170)	$0	6	-	0	($144,710)	$0	17	-	0	($370)	($156,880)	$0	($156,880)	23	-
May-15	0	($11,640)	$0	6	-	0	($159,560)	$0	17	-	0	($470)	($171,200)	$0	($171,200)	23	-
Jun-15	0	($12,000)	$0	6	-	0	($112,890)	$0	17	-	0	($450)	($124,890)	$0	($124,890)	23	-
Jul-15	0	($11,630)	$0	6	-	0	($114,580)	$0	17	-	0	($460)	($126,210)	$0	($126,210)	23	-
Aug-15	0	($11,000)	$0	6	-	0	($103,260)	$0	17	-	0	($391)	($114,260)	$0	($114,260)	23	-
Sep-15	0	($11,620)	$0	6	-	0	($113,390)	$0	17	-	0	($391)	($125,010)	$0	($125,010)	23	-
Oct-15	0	($11,580)	$0	6	-	0	($116,320)	$0	17	-	0	($400)	($127,900)	$0	($127,900)	23	-
Nov-15	0	($10,760)	$0	6	-	0	($217,870)	$0	19	-	0	($470)	($228,630)	$0	($228,630)	25	-
Dec-15	0	($10,590)	$0	6	-	0	($207,860)	$0	19	-	0		($218,450)	$0	($218,450)	25	-
Jan-16	60,000	$0	($11,800)	-	6	190,000	$0	($196,320)	-	19	250,000		$0	($208,120)	($208,120)	-	25
Feb-16	50,000	$0	($8,990)	-	5	180,000	$0	($163,560)	-	18	230,000		$0	($172,550)	($172,550)	-	23
Mar-16	40,000	$0	($6,720)	-	4	170,000	$0	($134,080)	-	17	210,000		$0	($140,800)	($140,800)	-	21
Apr-16	30,000	$0	($2,630)	-	3	180,000	$0	($97,680)	-	18	210,000		$0	($100,310)	($100,310)	-	21
May-16	20,000	$0	($790)	-	2	170,000	$0	($91,500)	-	17	190,000		$0	($92,290)	($92,290)	-	19
Jun-16	10,000	$0	($260)	-	1	160,000	$0	($81,950)	-	16	170,000		$0	($82,210)	($82,210)	-	17
Jul-16	0	$0	$0	-	-	150,000	$0	($67,470)	-	15	150,000		$0	($67,470)	($67,470)	-	15
Aug-16	0	$0	$0	-	-	130,000	$0	($50,340)	-	13	130,000		$0	($50,340)	($50,340)	-	13
Sep-16	0	$0	$0	-	-	110,000	$0	($32,970)	-	11	110,000		$0	($32,970)	($32,970)	-	11
Oct-16	0	$0	$0	-	-	90,000	$0	($19,840)	-	9	90,000		$0	($19,840)	($19,840)	-	9
Nov-16	0	$0	$0	-	-	60,000	$0	($7,590)	-	6	60,000		$0	($7,590)	($7,590)	-	6
Dec-16	0	$0	$0	-	-	30,000	$0	($3,140)	-	3	30,000		$0	($3,140)	($3,140)	-	3
Jan-17	0	$0	$0	-	-	0	$0	$0	-	-	0		$0	$0	$0	-	-
Feb-17	0	$0	$0	-	-	0	$0	$0	-	-	0		$0	$0	$0	-	-
Mar-17	0	$0	$0	-	-	0	$0	$0	-	-	0		$0	$0	$0	-	-
GCR 2014-2015	**0**	**($102,560)**	**$0**	**72**	**0**	**0**	**($865,480)**	**$0**	**214**	**0**	**0**	**($5,996)**	**($968,040)**	**$0**	**($968,040)**	**286**	**0**
GCR 2015-2016	**150,000**	**($102,990)**	**($27,510)**	**54**	**15**	**540,000**	**($1,290,440)**	**($493,960)**	**157**	**54**	**690,000**	**($3,405)**	**($1,393,430)**	**($521,470)**	**($1,914,900)**	**211**	**69**
GCR 2016-2017	**60,000**	**$0**	**($3,680)**	**0**	**6**	**1,080,000**	**$0**	**($452,480)**	**0**	**108**	**1,140,000**	**$0**	**$0**	**($456,160)**	**($456,160)**	**0**	**114**
Total	**210,000**	**($205,550)**	**($31,190)**	**126**	**21**	**1,620,000**	**($2,155,920)**	**($946,440)**	**371**	**162**	**1,830,000**	**($9,401)**	**($2,361,470)**	**($977,630)**	**($3,339,100)**	**497**	**183**

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
9/18/2013	April-14	Future	Realized	Buy	1	3.917
9/23/2013	April-14	Future	Realized	Buy	1	3.860
10/14/2013	April-14	Future	Realized	Buy	1	3.967
10/22/2013	April-14	Future	Realized	Buy	1	3.745
10/30/2013	April-14	Future	Realized	Buy	1	3.681
11/7/2013	April-14	Future	Realized	Buy	1	3.572
11/15/2013	April-14	Future	Realized	Buy	1	3.683
11/25/2013	April-14	Future	Realized	Buy	1	3.819
12/10/2013	April-14	Future	Realized	Buy	1	4.114
12/17/2013	April-14	Future	Realized	Buy	1	4.154
12/26/2013	April-14	Future	Realized	Buy	1	4.221
1/9/2014	April-14	Future	Realized	Buy	1	3.897
1/17/2014	April-14	Future	Realized	Buy	1	4.081
1/27/2014	April-14	Future	Realized	Buy	1	4.286
2/4/2014	April-14	Future	Realized	Buy	1	4.665
2/12/2014	April-14	Future	Realized	Buy	1	4.553
2/21/2014	April-14	Future	Realized	Buy	1	5.012
3/26/2014	April-14	Future	Realized	Sell	-17	4.402
10/15/2013	May-14	Future	Realized	Buy	1	3.957
10/23/2013	May-14	Future	Realized	Buy	1	3.779
11/8/2013	May-14	Future	Realized	Buy	1	3.617
11/19/2013	May-14	Future	Realized	Buy	1	3.636
11/26/2013	May-14	Future	Realized	Buy	1	3.842
12/10/2013	May-14	Future	Realized	Buy	1	4.125
12/18/2013	May-14	Future	Realized	Buy	1	4.122
12/27/2013	May-14	Future	Realized	Buy	1	4.176
1/10/2014	May-14	Future	Realized	Buy	1	3.894
1/21/2014	May-14	Future	Realized	Buy	1	4.158
1/28/2014	May-14	Future	Realized	Buy	1	4.322
2/5/2014	May-14	Future	Realized	Buy	1	4.485
2/13/2014	May-14	Future	Realized	Buy	1	4.591
2/24/2014	May-14	Future	Realized	Buy	1	4.518
3/5/2014	May-14	Future	Realized	Buy	1	4.484
3/12/2014	May-14	Future	Realized	Buy	1	4.441
3/20/2014	May-14	Future	Realized	Buy	1	4.349
4/25/2014	May-14	Future	Realized	Sell	-17	4.647
11/12/2013	June-14	Future	Realized	Buy	1	3.720
11/19/2013	June-14	Future	Realized	Buy	1	3.670
12/11/2013	June-14	Future	Realized	Buy	1	4.172
12/19/2013	June-14	Future	Realized	Buy	1	4.191
12/27/2013	June-14	Future	Realized	Buy	1	4.209
1/13/2014	June-14	Future	Realized	Buy	1	4.065
1/21/2014	June-14	Future	Realized	Buy	1	4.180
1/29/2014	June-14	Future	Realized	Buy	1	4.434
2/6/2014	June-14	Future	Realized	Buy	1	4.525
2/14/2014	June-14	Future	Realized	Buy	1	4.548
2/25/2014	June-14	Future	Realized	Buy	1	4.583
3/6/2014	June-14	Future	Realized	Buy	1	4.622
3/13/2014	June-14	Future	Realized	Buy	1	4.384
3/21/2014	June-14	Future	Realized	Buy	1	4.329
4/3/2014	June-14	Future	Realized	Buy	1	4.499
4/11/2014	June-14	Future	Realized	Buy	1	4.635
4/22/2014	June-14	Future	Realized	Buy	1	4.758
5/27/2014	June-14	Future	Realized	Sell	-17	4.505
12/12/2013	July-14	Future	Realized	Buy	1	4.192

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
12/20/2013	July-14	Future	Realized	Buy	1	4.203
1/14/2014	July-14	Future	Realized	Buy	1	4.135
1/22/2014	July-14	Future	Realized	Buy	1	4.273
1/30/2014	July-14	Future	Realized	Buy	1	4.357
2/7/2014	July-14	Future	Realized	Buy	1	4.506
2/18/2014	July-14	Future	Realized	Buy	1	4.685
2/26/2014	July-14	Future	Realized	Buy	1	4.544
3/7/2014	July-14	Future	Realized	Buy	1	4.622
3/14/2014	July-14	Future	Realized	Buy	1	4.473
3/24/2014	July-14	Future	Realized	Buy	1	4.344
4/4/2014	July-14	Future	Realized	Buy	1	4.506
4/15/2014	July-14	Future	Realized	Buy	1	4.625
4/22/2014	July-14	Future	Realized	Buy	1	4.786
5/2/2014	July-14	Future	Realized	Buy	1	4.704
5/12/2014	July-14	Future	Realized	Buy	1	4.439
5/20/2014	July-14	Future	Realized	Buy	1	4.553
6/25/2014	July-14	Future	Realized	Sell	-17	4.553
1/15/2014	August-14	Future	Realized	Buy	1	4.132
1/23/2014	August-14	Future	Realized	Buy	1	4.304
2/10/2014	August-14	Future	Realized	Buy	1	4.450
2/19/2014	August-14	Future	Realized	Buy	1	4.777
2/27/2014	August-14	Future	Realized	Buy	1	4.519
3/11/2014	August-14	Future	Realized	Buy	1	4.592
3/18/2014	August-14	Future	Realized	Buy	1	4.485
3/25/2014	August-14	Future	Realized	Buy	1	4.476
4/7/2014	August-14	Future	Realized	Buy	1	4.538
4/15/2014	August-14	Future	Realized	Buy	1	4.624
4/23/2014	August-14	Future	Realized	Buy	1	4.772
5/6/2014	August-14	Future	Realized	Buy	1	4.809
5/13/2014	August-14	Future	Realized	Buy	1	4.359
5/21/2014	August-14	Future	Realized	Buy	1	4.464
6/3/2014	August-14	Future	Realized	Buy	1	4.616
6/11/2014	August-14	Future	Realized	Buy	1	4.504
6/19/2014	August-14	Future	Realized	Buy	1	4.603
7/28/2014	August-14	Future	Realized	Sell	-17	3.746
2/11/2014	September-14	Future	Realized	Buy	1	4.540
2/20/2014	September-14	Future	Realized	Buy	1	4.648
3/11/2014	September-14	Future	Realized	Buy	1	4.555
3/18/2014	September-14	Future	Realized	Buy	1	4.461
3/26/2014	September-14	Future	Realized	Buy	1	4.458
4/8/2014	September-14	Future	Realized	Buy	1	4.558
4/16/2014	September-14	Future	Realized	Buy	1	4.575
4/24/2014	September-14	Future	Realized	Buy	1	4.738
5/6/2014	September-14	Future	Realized	Buy	1	4.780
5/14/2014	September-14	Future	Realized	Buy	1	4.342
5/22/2014	September-14	Future	Realized	Buy	1	4.316
6/4/2014	September-14	Future	Realized	Buy	1	4.602
6/12/2014	September-14	Future	Realized	Buy	1	4.743
6/20/2014	September-14	Future	Realized	Buy	1	4.539
7/2/2014	September-14	Future	Realized	Buy	1	4.348
7/14/2014	September-14	Future	Realized	Buy	1	4.140
7/22/2014	September-14	Future	Realized	Buy	1	3.785
8/26/2014	September-14	Future	Realized	Sell	-17	3.911
3/19/2014	October-14	Future	Realized	Buy	1	4.490
3/27/2014	October-14	Future	Realized	Buy	1	4.590

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
4/9/2014	October-14	Future	Realized	Buy	1	4.603
4/17/2014	October-14	Future	Realized	Buy	1	4.748
4/25/2014	October-14	Future	Realized	Buy	1	4.680
5/7/2014	October-14	Future	Realized	Buy	1	4.723
5/15/2014	October-14	Future	Realized	Buy	1	4.458
5/23/2014	October-14	Future	Realized	Buy	1	4.352
6/5/2014	October-14	Future	Realized	Buy	1	4.645
6/13/2014	October-14	Future	Realized	Buy	1	4.733
6/23/2014	October-14	Future	Realized	Buy	1	4.459
7/7/2014	October-14	Future	Realized	Buy	1	4.221
7/15/2014	October-14	Future	Realized	Buy	1	4.099
7/24/2014	October-14	Future	Realized	Buy	1	3.859
8/5/2014	October-14	Future	Realized	Buy	1	3.920
8/13/2014	October-14	Future	Realized	Buy	1	3.862
8/20/2014	October-14	Future	Realized	Buy	1	3.860
9/25/2014	October-14	Future	Realized	Sell	-17	3.971
3/28/2014	November-14	Future	Realized	Buy	1	4.588
4/10/2014	November-14	Future	Realized	Buy	1	4.730
4/17/2014	November-14	Future	Realized	Buy	1	4.786
4/28/2014	November-14	Future	Realized	Buy	1	4.836
5/8/2014	November-14	Future	Realized	Buy	1	4.602
5/16/2014	November-14	Future	Realized	Buy	1	4.448
5/27/2014	November-14	Future	Realized	Buy	1	4.479
6/6/2014	November-14	Future	Realized	Buy	1	4.690
6/16/2014	November-14	Future	Realized	Buy	1	4.732
6/24/2014	November-14	Future	Realized	Buy	1	4.560
7/8/2014	November-14	Future	Realized	Buy	1	4.235
7/16/2014	November-14	Future	Realized	Buy	1	4.160
7/24/2014	November-14	Future	Realized	Buy	1	3.906
8/6/2014	November-14	Future	Realized	Buy	1	4.024
8/14/2014	November-14	Future	Realized	Buy	1	3.999
8/21/2014	November-14	Future	Realized	Buy	1	4.001
9/2/2014	November-14	Future	Realized	Buy	1	3.938
9/12/2014	November-14	Future	Realized	Buy	1	3.911
9/24/2014	November-14	Future	Realized	Buy	1	3.965
10/28/2014	November-14	Future	Realized	Sell	-19	3.649
4/29/2014	December-14	Future	Realized	Buy	1	4.965
5/9/2014	December-14	Future	Realized	Buy	1	4.661
5/19/2014	December-14	Future	Realized	Buy	1	4.592
5/28/2014	December-14	Future	Realized	Buy	1	4.652
6/9/2014	December-14	Future	Realized	Buy	1	4.735
6/17/2014	December-14	Future	Realized	Buy	1	4.795
6/25/2014	December-14	Future	Realized	Buy	1	4.643
7/9/2014	December-14	Future	Realized	Buy	1	4.282
7/17/2014	December-14	Future	Realized	Buy	1	4.089
7/25/2014	December-14	Future	Realized	Buy	1	3.931
8/7/2014	December-14	Future	Realized	Buy	1	4.049
8/14/2014	December-14	Future	Realized	Buy	1	4.090
8/21/2014	December-14	Future	Realized	Buy	1	4.102
9/3/2014	December-14	Future	Realized	Buy	1	3.976
9/15/2014	December-14	Future	Realized	Buy	1	4.085
9/25/2014	December-14	Future	Realized	Buy	1	4.098
10/1/2014	December-14	Future	Realized	Buy	1	4.089
10/10/2014	December-14	Future	Realized	Buy	1	3.950
10/24/2014	December-14	Future	Realized	Buy	1	3.698

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
11/24/2014	December-14	Future	Realized	Sell	-19	4.151
5/29/2014	January-15	Future	Realized	Buy	1	4.680
6/10/2014	January-15	Future	Realized	Buy	1	4.675
6/18/2014	January-15	Future	Realized	Buy	1	4.806
6/26/2014	January-15	Future	Realized	Buy	1	4.580
7/10/2014	January-15	Future	Realized	Buy	1	4.295
7/18/2014	January-15	Future	Realized	Buy	1	4.155
7/28/2014	January-15	Future	Realized	Buy	1	3.980
8/8/2014	January-15	Future	Realized	Buy	1	4.202
8/15/2014	January-15	Future	Realized	Buy	1	4.052
8/21/2014	January-15	Future	Realized	Buy	1	4.179
9/3/2014	January-15	Future	Realized	Buy	1	4.050
9/15/2014	January-15	Future	Realized	Buy	1	4.150
9/25/2014	January-15	Future	Realized	Buy	1	4.169
10/1/2014	January-15	Future	Realized	Buy	1	4.153
10/10/2014	January-15	Future	Realized	Buy	1	4.035
10/24/2014	January-15	Future	Realized	Buy	1	3.787
11/3/2014	January-15	Future	Realized	Buy	1	4.146
11/11/2014	January-15	Future	Realized	Buy	1	4.344
11/14/2014	January-15	Future	Realized	Buy	1	4.129
12/26/2014	January-15	Future	Realized	Sell	-19	3.007
6/27/2014	February-15	Future	Realized	Buy	1	4.525
7/14/2014	February-15	Future	Realized	Buy	1	4.300
7/21/2014	February-15	Future	Realized	Buy	1	4.057
7/29/2014	February-15	Future	Realized	Buy	1	4.000
8/11/2014	February-15	Future	Realized	Buy	1	4.181
8/15/2014	February-15	Future	Realized	Buy	1	4.044
8/22/2014	February-15	Future	Realized	Buy	1	4.132
9/4/2014	February-15	Future	Realized	Buy	1	4.014
9/16/2014	February-15	Future	Realized	Buy	1	4.212
9/26/2014	February-15	Future	Realized	Buy	1	4.175
10/1/2014	February-15	Future	Realized	Buy	1	4.138
10/20/2014	February-15	Future	Realized	Buy	1	3.847
10/27/2014	February-15	Future	Realized	Buy	1	3.719
11/3/2014	February-15	Future	Realized	Buy	1	4.131
11/11/2014	February-15	Future	Realized	Buy	1	4.305
11/14/2014	February-15	Future	Realized	Buy	1	4.103
12/15/2014	February-15	Future	Realized	Buy	1	3.730
12/19/2014	February-15	Future	Realized	Buy	1	3.498
12/29/2014	February-15	Future	Realized	Buy	1	3.199
1/27/2015	February-15	Future	Realized	Sell	-19	2.981
7/30/2014	March-15	Future	Realized	Buy	1	3.944
8/12/2014	March-15	Future	Realized	Buy	1	4.128
8/18/2014	March-15	Future	Realized	Buy	1	3.997
8/22/2014	March-15	Future	Realized	Buy	1	4.055
9/5/2014	March-15	Future	Realized	Buy	1	3.943
9/17/2014	March-15	Future	Realized	Buy	1	4.146
9/26/2014	March-15	Future	Realized	Buy	1	4.108
10/6/2014	March-15	Future	Realized	Buy	1	3.980
10/20/2014	March-15	Future	Realized	Buy	1	3.792
10/27/2014	March-15	Future	Realized	Buy	1	3.661
11/4/2014	March-15	Future	Realized	Buy	1	4.131
11/12/2014	March-15	Future	Realized	Buy	1	4.148
11/17/2014	March-15	Future	Realized	Buy	1	4.293
12/15/2014	March-15	Future	Realized	Buy	1	3.697

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
12/19/2014	March-15	Future	Realized	Buy	1	3.458
12/29/2014	March-15	Future	Realized	Buy	1	3.192
1/5/2015	March-15	Future	Realized	Buy	1	2.875
1/16/2015	March-15	Future	Realized	Buy	1	3.087
1/21/2015	March-15	Future	Realized	Buy	1	2.940
2/24/2015	March-15	Future	Realized	Sell	-19	2.903
8/18/2014	April-15	Future	Realized	Buy	1	3.769
8/22/2014	April-15	Future	Realized	Buy	1	3.817
8/26/2014	April-15	Future	Realized	Buy	1	3.850
8/28/2014	April-15	Future	Realized	Buy	1	3.892
9/5/2014	April-15	Future	Realized	Buy	1	3.748
9/17/2014	April-15	Future	Realized	Buy	1	3.889
9/26/2014	April-15	Future	Realized	Buy	1	3.854
10/6/2014	April-15	Future	Realized	Buy	1	3.743
10/21/2014	April-15	Future	Realized	Buy	1	3.624
11/4/2014	April-15	Future	Realized	Buy	1	3.802
11/12/2014	April-15	Future	Realized	Buy	1	3.795
12/15/2014	April-15	Future	Realized	Buy	1	3.479
12/19/2014	April-15	Future	Realized	Buy	1	3.284
1/5/2015	April-15	Future	Realized	Buy	1	2.840
1/16/2015	April-15	Future	Realized	Buy	1	3.016
2/2/2015	April-15	Future	Realized	Buy	1	2.681
2/13/2015	April-15	Future	Realized	Buy	1	2.812
3/26/2015	April-15	Future	Realized	Sell	-17	2.672
8/19/2014	May-15	Future	Realized	Buy	1	3.793
8/25/2014	May-15	Future	Realized	Buy	1	3.850
8/27/2014	May-15	Future	Realized	Buy	1	3.863
9/8/2014	May-15	Future	Realized	Buy	1	3.790
9/18/2014	May-15	Future	Realized	Buy	1	3.799
9/29/2014	May-15	Future	Realized	Buy	1	3.879
10/6/2014	May-15	Future	Realized	Buy	1	3.721
10/21/2014	May-15	Future	Realized	Buy	1	3.608
11/5/2014	May-15	Future	Realized	Buy	1	3.775
11/13/2014	May-15	Future	Realized	Buy	1	3.637
12/16/2014	May-15	Future	Realized	Buy	1	3.396
12/22/2014	May-15	Future	Realized	Buy	1	3.094
1/6/2015	May-15	Future	Realized	Buy	1	2.887
1/20/2015	May-15	Future	Realized	Buy	1	2.821
2/3/2015	May-15	Future	Realized	Buy	1	2.781
2/13/2015	May-15	Future	Realized	Buy	1	2.853
3/2/2015	May-15	Future	Realized	Buy	1	2.739
4/27/2015	May-15	Future	Realized	Sell	-17	2.490
8/19/2014	June-15	Future	Realized	Buy	1	3.826
8/25/2014	June-15	Future	Realized	Buy	1	3.878
8/27/2014	June-15	Future	Realized	Buy	1	3.887
9/9/2014	June-15	Future	Realized	Buy	1	3.851
9/19/2014	June-15	Future	Realized	Buy	1	3.800
9/29/2014	June-15	Future	Realized	Buy	1	3.900
10/7/2014	June-15	Future	Realized	Buy	1	3.792
10/21/2014	June-15	Future	Realized	Buy	1	3.638
10/28/2014	June-15	Future	Realized	Buy	1	3.575
11/5/2014	June-15	Future	Realized	Buy	1	3.799
11/13/2014	June-15	Future	Realized	Buy	1	3.660
12/16/2014	June-15	Future	Realized	Buy	1	3.432
12/22/2014	June-15	Future	Realized	Buy	1	3.137

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
1/7/2015	June-15	Future	Realized	Buy	1	2.893
2/4/2015	June-15	Future	Realized	Buy	1	2.748
3/3/2015	June-15	Future	Realized	Buy	1	2.793
4/1/2015	June-15	Future	Realized	Buy	1	2.654
5/26/2015	June-15	Future	Realized	Sell	-17	2.822
8/19/2014	July-15	Future	Realized	Buy	1	3.859
8/25/2014	July-15	Future	Realized	Buy	1	3.913
8/27/2014	July-15	Future	Realized	Buy	1	3.918
9/9/2014	July-15	Future	Realized	Buy	1	3.880
9/19/2014	July-15	Future	Realized	Buy	1	3.830
9/29/2014	July-15	Future	Realized	Buy	1	3.925
10/7/2014	July-15	Future	Realized	Buy	1	3.818
10/22/2014	July-15	Future	Realized	Buy	1	3.641
10/29/2014	July-15	Future	Realized	Buy	1	3.662
11/6/2014	July-15	Future	Realized	Buy	1	3.846
11/17/2014	July-15	Future	Realized	Buy	1	3.795
12/16/2014	July-15	Future	Realized	Buy	1	3.469
1/8/2015	July-15	Future	Realized	Buy	1	3.002
2/5/2015	July-15	Future	Realized	Buy	1	2.757
3/4/2015	July-15	Future	Realized	Buy	1	2.896
4/2/2015	July-15	Future	Realized	Buy	1	2.819
5/4/2015	July-15	Future	Realized	Buy	1	2.878
6/25/2015	July-15	Future	Realized	Sell	-17	2.850
8/20/2014	August-15	Future	Realized	Buy	1	3.844
8/26/2014	August-15	Future	Realized	Buy	1	3.899
8/28/2014	August-15	Future	Realized	Buy	1	3.931
9/10/2014	August-15	Future	Realized	Buy	1	3.886
9/22/2014	August-15	Future	Realized	Buy	1	3.847
10/8/2014	August-15	Future	Realized	Buy	1	3.772
10/22/2014	August-15	Future	Realized	Buy	1	3.657
11/6/2014	August-15	Future	Realized	Buy	1	3.860
11/18/2014	August-15	Future	Realized	Buy	1	3.764
12/17/2014	August-15	Future	Realized	Buy	1	3.518
12/23/2014	August-15	Future	Realized	Buy	1	3.230
1/8/2015	August-15	Future	Realized	Buy	1	3.010
2/6/2015	August-15	Future	Realized	Buy	1	2.767
3/5/2015	August-15	Future	Realized	Buy	1	2.975
4/6/2015	August-15	Future	Realized	Buy	1	2.787
5/5/2015	August-15	Future	Realized	Buy	1	2.859
6/1/2015	August-15	Future	Realized	Buy	1	2.677
7/28/2015	August-15	Future	Realized	Sell	-17	2.821
8/20/2014	September-15	Future	Realized	Buy	1	3.829
8/26/2014	September-15	Future	Realized	Buy	1	3.892
9/11/2014	September-15	Future	Realized	Buy	1	3.806
9/23/2014	September-15	Future	Realized	Buy	1	3.815
10/8/2014	September-15	Future	Realized	Buy	1	3.764
10/22/2014	September-15	Future	Realized	Buy	1	3.649
11/7/2014	September-15	Future	Realized	Buy	1	3.818
11/18/2014	September-15	Future	Realized	Buy	1	3.751
12/17/2014	September-15	Future	Realized	Buy	1	3.499
12/23/2014	September-15	Future	Realized	Buy	1	3.217
1/9/2015	September-15	Future	Realized	Buy	1	3.041
1/20/2015	September-15	Future	Realized	Buy	1	2.904
2/6/2015	September-15	Future	Realized	Buy	1	2.758
3/6/2015	September-15	Future	Realized	Buy	1	2.960

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
4/7/2015	September-15	Future	Realized	Buy	1	2.818
5/6/2015	September-15	Future	Realized	Buy	1	2.863
6/2/2015	September-15	Future	Realized	Buy	1	2.736
8/26/2015	September-15	Future	Realized	Sell	-17	2.693
9/11/2014	October-15	Future	Realized	Buy	1	3.841
9/23/2014	October-15	Future	Realized	Buy	1	3.849
10/9/2014	October-15	Future	Realized	Buy	1	3.794
10/23/2014	October-15	Future	Realized	Buy	1	3.638
11/7/2014	October-15	Future	Realized	Buy	1	3.854
11/19/2014	October-15	Future	Realized	Buy	1	3.790
12/17/2014	October-15	Future	Realized	Buy	1	3.527
12/24/2014	October-15	Future	Realized	Buy	1	3.154
1/12/2015	October-15	Future	Realized	Buy	1	2.925
1/23/2015	October-15	Future	Realized	Buy	1	3.061
2/9/2015	October-15	Future	Realized	Buy	1	2.824
2/17/2015	October-15	Future	Realized	Buy	1	2.942
3/9/2015	October-15	Future	Realized	Buy	1	2.856
4/8/2015	October-15	Future	Realized	Buy	1	2.787
5/7/2015	October-15	Future	Realized	Buy	1	2.868
6/3/2015	October-15	Future	Realized	Buy	1	2.713
7/6/2015	October-15	Future	Realized	Buy	1	2.797
9/25/2015	October-15	Future	Realized	Sell	-17	2.564
10/9/2014	November-15	Future	Realized	Buy	1	3.889
10/23/2014	November-15	Future	Realized	Buy	1	3.736
10/30/2014	November-15	Future	Realized	Buy	1	3.825
11/10/2014	November-15	Future	Realized	Buy	1	3.855
11/19/2014	November-15	Future	Realized	Buy	1	3.866
12/18/2014	November-15	Future	Realized	Buy	1	3.589
12/24/2014	November-15	Future	Realized	Buy	1	3.268
1/13/2015	November-15	Future	Realized	Buy	1	3.125
1/26/2015	November-15	Future	Realized	Buy	1	3.100
2/9/2015	November-15	Future	Realized	Buy	1	2.940
2/17/2015	November-15	Future	Realized	Buy	1	3.046
3/10/2015	November-15	Future	Realized	Buy	1	2.981
3/25/2015	November-15	Future	Realized	Buy	1	2.989
4/9/2015	November-15	Future	Realized	Buy	1	2.820
5/8/2015	November-15	Future	Realized	Buy	1	3.092
6/4/2015	November-15	Future	Realized	Buy	1	2.830
7/9/2015	November-15	Future	Realized	Buy	1	2.884
8/4/2015	November-15	Future	Realized	Buy	1	2.941
9/10/2015	November-15	Future	Realized	Buy	1	2.759
10/27/2015	November-15	Future	Realized	Sell	-19	2.092
11/10/2014	December-15	Future	Realized	Buy	1	4.021
11/13/2014	December-15	Future	Realized	Buy	1	3.978
11/20/2014	December-15	Future	Realized	Buy	1	4.035
12/18/2014	December-15	Future	Realized	Buy	1	3.766
12/26/2014	December-15	Future	Realized	Buy	1	3.468
1/13/2015	December-15	Future	Realized	Buy	1	3.303
1/27/2015	December-15	Future	Realized	Buy	1	3.343
2/10/2015	December-15	Future	Realized	Buy	1	3.189
2/18/2015	December-15	Future	Realized	Buy	1	3.261
3/11/2015	December-15	Future	Realized	Buy	1	3.191
3/26/2015	December-15	Future	Realized	Buy	1	3.100
4/10/2015	December-15	Future	Realized	Buy	1	2.974
4/24/2015	December-15	Future	Realized	Buy	1	3.010

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
5/11/2015	December-15	Future	Realized	Buy	1	3.197
6/5/2015	December-15	Future	Realized	Buy	1	2.993
7/23/2015	December-15	Future	Realized	Buy	1	3.130
8/7/2015	December-15	Future	Realized	Buy	1	3.082
9/10/2015	December-15	Future	Realized	Buy	1	2.914
10/1/2015	December-15	Future	Realized	Buy	1	2.631
11/24/2015	December-15	Future	Realized	Sell	-19	2.200
12/18/2014	January-16	Future	Unrealized	Buy	1	3.910
12/26/2014	January-16	Future	Unrealized	Buy	1	3.619
12/30/2014	January-16	Future	Unrealized	Buy	1	3.645
1/14/2015	January-16	Future	Unrealized	Buy	1	3.575
1/28/2015	January-16	Future	Unrealized	Buy	1	3.409
2/11/2015	January-16	Future	Unrealized	Buy	1	3.366
2/18/2015	January-16	Future	Unrealized	Buy	1	3.387
3/12/2015	January-16	Future	Unrealized	Buy	1	3.267
3/27/2015	January-16	Future	Unrealized	Buy	1	3.181
4/13/2015	January-16	Future	Unrealized	Buy	1	3.054
4/27/2015	January-16	Future	Unrealized	Buy	1	3.081
5/12/2015	January-16	Future	Unrealized	Buy	1	3.374
5/26/2015	January-16	Future	Unrealized	Buy	1	3.275
6/8/2015	January-16	Future	Unrealized	Buy	1	3.200
7/14/2015	January-16	Future	Unrealized	Buy	1	3.254
8/10/2015	January-16	Future	Unrealized	Buy	1	3.230
9/10/2015	January-16	Future	Unrealized	Buy	1	3.024
10/2/2015	January-16	Future	Unrealized	Buy	1	2.798
11/2/2015	January-16	Future	Unrealized	Buy	1	2.448
1/15/2015	February-16	Future	Unrealized	Buy	1	3.520
1/22/2015	February-16	Future	Unrealized	Buy	1	3.404
1/29/2015	February-16	Future	Unrealized	Buy	1	3.313
2/12/2015	February-16	Future	Unrealized	Buy	1	3.321
2/20/2015	February-16	Future	Unrealized	Buy	1	3.409
3/13/2015	February-16	Future	Unrealized	Buy	1	3.242
3/30/2015	February-16	Future	Unrealized	Buy	1	3.173
4/14/2015	February-16	Future	Unrealized	Buy	1	3.068
4/28/2015	February-16	Future	Unrealized	Buy	1	3.090
5/13/2015	February-16	Future	Unrealized	Buy	1	3.383
5/27/2015	February-16	Future	Unrealized	Buy	1	3.256
6/10/2015	February-16	Future	Unrealized	Buy	1	3.335
6/24/2015	February-16	Future	Unrealized	Buy	1	3.255
7/16/2015	February-16	Future	Unrealized	Buy	1	3.251
8/10/2015	February-16	Future	Unrealized	Buy	1	3.223
9/11/2015	February-16	Future	Unrealized	Buy	1	3.027
10/19/2015	February-16	Future	Unrealized	Buy	1	2.818
11/3/2015	February-16	Future	Unrealized	Buy	1	2.488
2/2/2015	March-16	Future	Unrealized	Buy	1	3.234
2/23/2015	March-16	Future	Unrealized	Buy	1	3.297
2/26/2015	March-16	Future	Unrealized	Buy	1	3.196
3/16/2015	March-16	Future	Unrealized	Buy	1	3.171
3/30/2015	March-16	Future	Unrealized	Buy	1	3.127
4/15/2015	March-16	Future	Unrealized	Buy	1	3.077
4/29/2015	March-16	Future	Unrealized	Buy	1	3.097
5/14/2015	March-16	Future	Unrealized	Buy	1	3.354
5/28/2015	March-16	Future	Unrealized	Buy	1	3.122
6/12/2015	March-16	Future	Unrealized	Buy	1	3.203
6/26/2015	March-16	Future	Unrealized	Buy	1	3.186

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
7/10/2015	March-16	Future	Unrealized	Buy	1	3.181
7/20/2015	March-16	Future	Unrealized	Buy	1	3.194
8/14/2015	March-16	Future	Unrealized	Buy	1	3.146
9/11/2015	March-16	Future	Unrealized	Buy	1	2.993
10/20/2015	March-16	Future	Unrealized	Buy	1	2.793
11/4/2015	March-16	Future	Unrealized	Buy	1	2.460
5/20/2015	April-16	Future	Unrealized	Buy	1	3.116
5/22/2015	April-16	Future	Unrealized	Buy	1	3.106
5/27/2015	April-16	Future	Unrealized	Buy	1	3.049
6/1/2015	April-16	Future	Unrealized	Buy	1	2.953
6/15/2015	April-16	Future	Unrealized	Buy	1	3.109
6/24/2015	April-16	Future	Unrealized	Buy	1	3.064
7/6/2015	April-16	Future	Unrealized	Buy	1	3.016
7/17/2015	April-16	Future	Unrealized	Buy	1	3.067
7/27/2015	April-16	Future	Unrealized	Buy	1	3.022
8/3/2015	April-16	Future	Unrealized	Buy	1	2.961
8/14/2015	April-16	Future	Unrealized	Buy	1	2.990
8/21/2015	April-16	Future	Unrealized	Buy	1	2.866
9/2/2015	April-16	Future	Unrealized	Buy	1	2.810
9/21/2015	April-16	Future	Unrealized	Buy	1	2.755
10/1/2015	April-16	Future	Unrealized	Buy	1	2.630
10/27/2015	April-16	Future	Unrealized	Buy	1	2.474
11/5/2015	April-16	Future	Unrealized	Buy	1	2.500
11/18/2015	April-16	Future	Unrealized	Buy	1	2.508
5/21/2015	May-16	Future	Unrealized	Buy	1	3.126
5/26/2015	May-16	Future	Unrealized	Buy	1	3.063
5/28/2015	May-16	Future	Unrealized	Buy	1	2.987
6/3/2015	May-16	Future	Unrealized	Buy	1	2.964
6/17/2015	May-16	Future	Unrealized	Buy	1	3.093
6/25/2015	May-16	Future	Unrealized	Buy	1	3.095
7/7/2015	May-16	Future	Unrealized	Buy	1	3.000
7/21/2015	May-16	Future	Unrealized	Buy	1	3.084
7/28/2015	May-16	Future	Unrealized	Buy	1	3.039
8/5/2015	May-16	Future	Unrealized	Buy	1	2.960
8/17/2015	May-16	Future	Unrealized	Buy	1	2.944
8/25/2015	May-16	Future	Unrealized	Buy	1	2.823
9/3/2015	May-16	Future	Unrealized	Buy	1	2.862
9/21/2015	May-16	Future	Unrealized	Buy	1	2.754
9/28/2015	May-16	Future	Unrealized	Buy	1	2.786
10/20/2015	May-16	Future	Unrealized	Buy	1	2.687
11/6/2015	May-16	Future	Unrealized	Buy	1	2.530
5/21/2015	June-16	Future	Unrealized	Buy	1	3.155
5/26/2015	June-16	Future	Unrealized	Buy	1	3.093
5/28/2015	June-16	Future	Unrealized	Buy	1	3.021
6/9/2015	June-16	Future	Unrealized	Buy	1	3.118
6/19/2015	June-16	Future	Unrealized	Buy	1	3.107
6/26/2015	June-16	Future	Unrealized	Buy	1	3.084
7/10/2015	June-16	Future	Unrealized	Buy	1	3.073
7/22/2015	June-16	Future	Unrealized	Buy	1	3.111
7/28/2015	June-16	Future	Unrealized	Buy	1	3.067
8/12/2015	June-16	Future	Unrealized	Buy	1	3.055
8/25/2015	June-16	Future	Unrealized	Buy	1	2.857
9/14/2015	June-16	Future	Unrealized	Buy	1	2.915
9/22/2015	June-16	Future	Unrealized	Buy	1	2.786
10/21/2015	June-16	Future	Unrealized	Buy	1	2.692

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
10/26/2015	June-16	Future	Unrealized	Buy	1	2.531
11/9/2015	June-16	Future	Unrealized	Buy	1	2.522
6/11/2015	July-16	Future	Unrealized	Buy	1	3.149
6/23/2015	July-16	Future	Unrealized	Buy	1	3.116
6/29/2015	July-16	Future	Unrealized	Buy	1	3.130
7/13/2015	July-16	Future	Unrealized	Buy	1	3.134
7/23/2015	July-16	Future	Unrealized	Buy	1	3.094
7/29/2015	July-16	Future	Unrealized	Buy	1	3.110
8/7/2015	July-16	Future	Unrealized	Buy	1	3.026
8/18/2015	July-16	Future	Unrealized	Buy	1	2.980
8/26/2015	July-16	Future	Unrealized	Buy	1	2.899
9/15/2015	July-16	Future	Unrealized	Buy	1	2.933
9/23/2015	July-16	Future	Unrealized	Buy	1	2.830
10/21/2015	July-16	Future	Unrealized	Buy	1	2.734
10/27/2015	July-16	Future	Unrealized	Buy	1	2.595
11/10/2015	July-16	Future	Unrealized	Buy	1	2.613
11/16/2015	July-16	Future	Unrealized	Buy	1	2.664
7/9/2015	August-16	Future	Unrealized	Buy	1	3.100
7/16/2015	August-16	Future	Unrealized	Buy	1	3.126
7/27/2015	August-16	Future	Unrealized	Buy	1	3.093
8/10/2015	August-16	Future	Unrealized	Buy	1	3.055
8/19/2015	August-16	Future	Unrealized	Buy	1	2.972
8/27/2015	August-16	Future	Unrealized	Buy	1	2.905
9/4/2015	August-16	Future	Unrealized	Buy	1	2.921
9/16/2015	August-16	Future	Unrealized	Buy	1	2.902
9/24/2015	August-16	Future	Unrealized	Buy	1	2.879
10/22/2015	August-16	Future	Unrealized	Buy	1	2.737
10/28/2015	August-16	Future	Unrealized	Buy	1	2.573
11/11/2015	August-16	Future	Unrealized	Buy	1	2.616
11/18/2015	August-16	Future	Unrealized	Buy	1	2.629
8/11/2015	September-16	Future	Unrealized	Buy	1	3.048
8/20/2015	September-16	Future	Unrealized	Buy	1	2.994
8/28/2015	September-16	Future	Unrealized	Buy	1	2.927
9/8/2015	September-16	Future	Unrealized	Buy	1	2.950
9/18/2015	September-16	Future	Unrealized	Buy	1	2.852
9/25/2015	September-16	Future	Unrealized	Buy	1	2.837
10/2/2015	September-16	Future	Unrealized	Buy	1	2.741
10/22/2015	September-16	Future	Unrealized	Buy	1	2.734
10/28/2015	September-16	Future	Unrealized	Buy	1	2.574
11/12/2015	September-16	Future	Unrealized	Buy	1	2.626
11/20/2015	September-16	Future	Unrealized	Buy	1	2.492
9/8/2015	October-16	Future	Unrealized	Buy	1	2.975
9/18/2015	October-16	Future	Unrealized	Buy	1	2.879
9/28/2015	October-16	Future	Unrealized	Buy	1	2.885
10/19/2015	October-16	Future	Unrealized	Buy	1	2.790
10/23/2015	October-16	Future	Unrealized	Buy	1	2.701
10/29/2015	October-16	Future	Unrealized	Buy	1	2.565
11/9/2015	October-16	Future	Unrealized	Buy	1	2.610
11/12/2015	October-16	Future	Unrealized	Buy	1	2.650
11/19/2015	October-16	Future	Unrealized	Buy	1	2.591
10/19/2015	November-16	Future	Unrealized	Buy	1	2.879
10/26/2015	November-16	Future	Unrealized	Buy	1	2.719
10/29/2015	November-16	Future	Unrealized	Buy	1	2.663
11/11/2015	November-16	Future	Unrealized	Buy	1	2.722
11/16/2015	November-16	Future	Unrealized	Buy	1	2.767

MGU Futures Detail

Mark-to-Market Report as of November 30, 2015

Trade Date	Risk Date	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Trade Price /MMBtu
11/20/2015	November-16	Future	Unrealized	Buy	1	2.591
11/12/2015	December-16	Future	Unrealized	Buy	1	2.882
11/17/2015	December-16	Future	Unrealized	Buy	1	2.914
11/23/2015	December-16	Future	Unrealized	Buy	1	2.786

MGU Options Detail

Mark-to-Market Report as of 11/30/2015

Trade Date	Strategy	Risk Date	Trade Type	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Option Type	Strike Price	NYMEX Exchange NG + /MMBtu	Ext Option Prem
9/20/2013	MGU System Supply	April-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.000	0.253	(2,530)
10/24/2013	MGU System Supply	April-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.000	0.186	(1,860)
11/21/2013	MGU System Supply	April-14	Listed Option (G)	Option	Realized	Buy	1	Call	3.750	0.232	(2,320)
12/26/2013	MGU System Supply	April-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.238	(2,380)
1/29/2014	MGU System Supply	April-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.200	(2,000)
2/27/2014	MGU System Supply	April-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.095	(950)
3/25/2014	MGU System Supply	April-14	Listed Option (G)	Option	Realized	Sell	-1	Call	3.750	0.664	6,640
3/25/2014	MGU System Supply	April-14	Listed Option (G)	Option	Realized	Sell	-2	Call	4.000	0.415	8,300
3/25/2014	MGU System Supply	April-14	Listed Option (G)	Option	Realized	Sell	-1	Call	4.250	0.165	1,650
10/23/2013	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.000	0.207	(2,070)
11/20/2013	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Buy	1	Call	3.750	0.255	(2,550)
12/24/2013	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.223	(2,230)
1/28/2014	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.203	(2,030)
2/26/2014	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.222	(2,220)
3/28/2014	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.144	(1,440)
4/24/2014	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Sell	-1	Call	3.750	0.970	9,700
4/24/2014	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Sell	-1	Call	4.000	0.720	7,200
4/24/2014	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Sell	-1	Call	4.250	0.470	4,700
4/24/2014	MGU System Supply	May-14	Listed Option (G)	Option	Realized	Sell	-3	Call	4.500	0.220	6,600
11/19/2013	MGU System Supply	June-14	Listed Option (G)	Option	Realized	Buy	1	Call	3.750	0.258	(2,580)
12/23/2013	MGU System Supply	June-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.263	(2,630)
1/27/2014	MGU System Supply	June-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.251	(2,510)
2/25/2014	MGU System Supply	June-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.255	(2,550)
3/27/2014	MGU System Supply	June-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.197	(1,970)
4/29/2014	MGU System Supply	June-14	Listed Option (G)	Option	Realized	Buy	1	Call	5.000	0.092	(920)
5/23/2014	MGU System Supply	June-14	Listed Option (G)	Option	Realized	Sell	-1	Call	3.750	0.646	6,460
5/23/2014	MGU System Supply	June-14	Listed Option (G)	Option	Realized	Sell	-1	Call	4.250	0.149	1,490
5/23/2014	MGU System Supply	June-14	Listed Option (G)	Option	Realized	Sell	-2	Call	4.500	0.009	180
12/20/2013	MGU System Supply	July-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.304	(3,040)
1/24/2014	MGU System Supply	July-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.260	(2,600)
2/24/2014	MGU System Supply	July-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.285	(2,850)
3/26/2014	MGU System Supply	July-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.247	(2,470)
4/28/2014	MGU System Supply	July-14	Listed Option (G)	Option	Realized	Buy	1	Call	5.000	0.155	(1,550)
5/28/2014	MGU System Supply	July-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.090	(900)
6/24/2014	MGU System Supply	July-14	Listed Option (G)	Option	Realized	Sell	-1	Call	4.250	0.300	3,000
6/24/2014	MGU System Supply	July-14	Listed Option (G)	Option	Realized	Sell	-2	Call	4.500	0.060	1,200
1/23/2014	MGU System Supply	August-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.265	(2,650)
2/21/2014	MGU System Supply	August-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.390	(3,900)
3/25/2014	MGU System Supply	August-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.285	(2,850)
4/25/2014	MGU System Supply	August-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.251	(2,510)
5/27/2014	MGU System Supply	August-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.202	(2,020)
6/27/2014	MGU System Supply	August-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.096	(960)
2/20/2014	MGU System Supply	September-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.375	(3,750)
3/24/2014	MGU System Supply	September-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.240	(2,400)
4/24/2014	MGU System Supply	September-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.310	(3,100)
5/23/2014	MGU System Supply	September-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.188	(1,880)
6/26/2014	MGU System Supply	September-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.172	(1,720)
7/30/2014	MGU System Supply	September-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.000	0.052	(520)
8/25/2014	MGU System Supply	September-14	Listed Option (G)	Option	Realized	Sell	-1	Call	4.000	0.013	130
3/21/2014	MGU System Supply	October-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.287	(2,870)
4/23/2014	MGU System Supply	October-14	Listed Option (G)	Option	Realized	Buy	1	Call	5.000	0.274	(2,740)
5/22/2014	MGU System Supply	October-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.222	(2,220)
6/25/2014	MGU System Supply	October-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.165	(1,650)
7/29/2014	MGU System Supply	October-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.000	0.108	(1,080)
8/28/2014	MGU System Supply	October-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.000	0.145	(1,450)
9/24/2014	MGU System Supply	October-14	Listed Option (G)	Option	Realized	Sell	-2	Call	4.000	0.014	280
4/22/2014	MGU System Supply	November-14	Listed Option (G)	Option	Realized	Buy	1	Call	5.000	0.315	(3,150)
5/21/2014	MGU System Supply	November-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.500	0.337	(3,370)
6/24/2014	MGU System Supply	November-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.230	(2,300)
7/28/2014	MGU System Supply	November-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.000	0.156	(1,560)
8/27/2014	MGU System Supply	November-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.118	(1,180)
9/29/2014	MGU System Supply	November-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.110	(1,100)
5/20/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.331	(3,310)
6/23/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.265	(2,650)
7/25/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.000	0.229	(2,290)
8/26/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.200	(2,000)
9/26/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.166	(1,660)
10/23/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Buy	1	Call	3.750	0.135	(1,350)
11/21/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Sell	-1	Call	3.750	0.537	5,370
11/21/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Sell	-1	Call	4.000	0.302	3,020
11/21/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Sell	-2	Call	4.250	0.125	2,500
11/21/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Sell	-1	Call	4.750	0.005	50
11/21/2014	MGU System Supply	December-14	Listed Option (G)	Option	Realized	Sell	-1	Call	4.750	0.006	60

MGU Options Detail

Mark-to-Market Report as of 11/30/2015

Trade Date	Strategy	Risk Date	Trade Type	Trade Type	P/L Type	Buy / Sell	Contract Qty X 10,000 = # Dth	Option Type	Strike Price	NYMEX Exchange NG + /MMBtu	Ext Option Prem
7/24/2014	MGU System Supply	February-15	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.268	(2,680)
8/22/2014	MGU System Supply	February-15	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.302	(3,020)
9/24/2014	MGU System Supply	February-15	Listed Option (G)	Option	Realized	Buy	1	Call	4.250	0.296	(2,960)
10/27/2014	MGU System Supply	February-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.750	0.273	(2,730)
11/19/2014	MGU System Supply	February-15	Listed Option (G)	Option	Realized	Buy	1	Call	4.750	0.418	(4,180)
12/22/2014	MGU System Supply	February-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.190	(1,900)
10/30/2014	MGU System Supply	May-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.750	0.254	(2,540)
11/24/2014	MGU System Supply	May-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.750	0.282	(2,820)
12/26/2014	MGU System Supply	May-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.190	(1,900)
1/26/2015	MGU System Supply	May-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.207	(2,070)
2/20/2015	MGU System Supply	May-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.135	(1,350)
3/17/2015	MGU System Supply	May-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.096	(960)
12/30/2014	MGU System Supply	July-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.290	(2,900)
1/28/2015	MGU System Supply	July-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.296	(2,960)
2/24/2015	MGU System Supply	July-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.182	(1,820)
3/20/2015	MGU System Supply	July-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.198	(1,980)
4/17/2015	MGU System Supply	July-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.093	(930)
5/15/2015	MGU System Supply	July-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.104	(1,040)
1/29/2015	MGU System Supply	August-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.266	(2,660)
2/25/2015	MGU System Supply	August-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.185	(1,850)
3/20/2015	MGU System Supply	August-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.232	(2,320)
4/20/2015	MGU System Supply	August-15	Listed Option (G)	Option	Realized	Buy	1	Call	2.750	0.184	(1,840)
5/18/2015	MGU System Supply	August-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.154	(1,540)
6/15/2015	MGU System Supply	August-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.131	(1,310)
7/27/2015	MGU System Supply	August-15	Listed Option (G)	Option	Realized	Sell	-1	Call	2.750	0.052	520
2/26/2015	MGU System Supply	September-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.244	(2,440)
3/23/2015	MGU System Supply	September-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.240	(2,400)
4/21/2015	MGU System Supply	September-15	Listed Option (G)	Option	Realized	Buy	1	Call	2.750	0.234	(2,340)
5/19/2015	MGU System Supply	September-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.173	(1,730)
6/16/2015	MGU System Supply	September-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.191	(1,910)
7/6/2015	MGU System Supply	September-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.085	(850)
8/25/2015	MGU System Supply	September-15	Listed Option (G)	Option	Realized	Sell	-1	Call	2.750	0.005	50
4/23/2015	MGU System Supply	November-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.224	(2,240)
5/21/2015	MGU System Supply	November-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.252	(2,520)
6/18/2015	MGU System Supply	November-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.272	(2,720)
7/27/2015	MGU System Supply	November-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.183	(1,830)
8/24/2015	MGU System Supply	November-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.077	(770)
9/1/2015	MGU System Supply	November-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.068	(680)
5/22/2015	MGU System Supply	December-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.500	0.234	(2,340)
6/19/2015	MGU System Supply	December-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.282	(2,820)
7/28/2015	MGU System Supply	December-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.250	0.196	(1,960)
8/25/2015	MGU System Supply	December-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.176	(1,760)
9/23/2015	MGU System Supply	December-15	Listed Option (G)	Option	Realized	Buy	1	Call	3.000	0.096	(960)
10/22/2015	MGU System Supply	December-15	Listed Option (G)	Option	Realized	Buy	1	Call	2.750	0.075	(750)
6/23/2015	MGU System Supply	January-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.250	0.347	(3,470)
7/29/2015	MGU System Supply	January-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.500	0.214	(2,140)
8/26/2015	MGU System Supply	January-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.250	0.194	(1,940)
9/24/2015	MGU System Supply	January-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.000	0.224	(2,240)
10/23/2015	MGU System Supply	January-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.750	0.162	(1,620)
11/18/2015	MGU System Supply	January-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.750	0.075	(750)
7/29/2015	MGU System Supply	February-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.500	0.250	(2,500)
8/27/2015	MGU System Supply	February-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.250	0.224	(2,240)
9/25/2015	MGU System Supply	February-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.000	0.262	(2,620)
10/26/2015	MGU System Supply	February-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.750	0.183	(1,830)
11/19/2015	MGU System Supply	February-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.750	0.096	(960)
8/28/2015	MGU System Supply	March-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.250	0.259	(2,590)
9/28/2015	MGU System Supply	March-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.000	0.297	(2,970)
10/27/2015	MGU System Supply	March-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.750	0.213	(2,130)
11/20/2015	MGU System Supply	March-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.500	0.165	(1,650)
9/28/2015	MGU System Supply	April-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	3.000	0.178	(1,780)
10/28/2015	MGU System Supply	April-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.500	0.220	(2,200)
11/23/2015	MGU System Supply	April-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.500	0.157	(1,570)
10/29/2015	MGU System Supply	May-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.500	0.214	(2,140)
11/24/2015	MGU System Supply	May-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.500	0.187	(1,870)
11/24/2015	MGU System Supply	June-16	Listed Option (G)	Option	Unrealized	Buy	1	Call	2.500	0.215	(2,150)

MGUC
SUMMARY OF 2017 - 2018 HEDGE TARGET
MMBtu

Line		PURCHASES	HEDGE TARGET	HEDGE PERCENTAGE
1	Apr-17	1,801,465	280,000	15.5%
2	May-17	1,702,750	280,000	16.4%
3	Jun-17	1,281,667	280,000	21.8%
4	Jul-17	1,315,849	280,000	21.3%
5	Aug-17	1,296,405	280,000	21.6%
6	Sep-17	1,365,482	280,000	20.5%
7	Oct-17	1,022,297	280,000	27.4%
8	Nov-17	860,906	260,000	30.2%
9	Dec-17	1,408,501	260,000	18.5%
10	Jan-18	1,527,454	260,000	17.0%
11	Feb-18	1,376,063	260,000	18.9%
12	Mar-18	1,360,346	260,000	19.1%
13	Apr-2017 to Mar-2018	16,319,185	3,260,000	20.0%
14	Average Summer Month	1,397,988	280,000	20.0%
15	Average Winter Month	1,306,654	260,000	19.9%

MGUC

During each month of the 12-month trading window, MGUC is not allowed to hedge more than 50,000 Dth for each hedge month

MMBtu

		Trade Date																							
Line	Hedge Month	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
1	Apr-17	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-	-	-	-	-	-	-	-	-	-
2	May-17	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-	-	-	-	-	-	-	-	-
3	Jun-17	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-	-	-	-	-	-	-	-
4	Jul-17	-	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-	-	-	-	-	-	-
5	Aug-17	-	-	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-	-	-	-	-	-
6	Sep-17	-	-	-	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-	-	-	-	-
7	Oct-17	-	-	-	-	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-	-	-	-
8	Nov-17	-	-	-	-	-	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-	-	-
9	Dec-17	-	-	-	-	-	-	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-	-
10	Jan-18	-	-	-	-	-	-	-	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-	-
11	Feb-18	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-	-
12	Mar-18	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	-
13	Total	-	50,000	100,000	150,000	200,000	250,000	300,000	350,000	400,000	450,000	500,000	550,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	50,000	-

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

* * * * *

In the matter of the application of **MICHIGAN GAS UTILITIES CORPORATION** to implement a gas cost recovery plan and factors for the 12-month period from April 2016 through March 2017, and for related approvals.	)))))	Case No. U-17940

DIRECT TESTIMONY AND EXHIBITS

OF

DAVID J. TYLER

ON BEHALF OF

MICHIGAN GAS UTILITIES CORPORATION

Dated: December 30, 2015

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A My name is David J. Tyler and my business address is 899 S. Telegraph Road, Monroe, Michigan 48161.

Q BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A I am employed by Michigan Gas Utilities Corporation ("MGUC" or the "Company"), a wholly-owned subsidiary of WEC Energy Group ("WEC"), as Manager, Regulatory Services for the state of Michigan.

Q BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EMPLOYMENT HISTORY.

A I graduated from Wayne State University in 1976 with a BS Degree in Business Administration, majoring in Accounting.

From 1976 to 1987, I was employed by ANR Pipeline Company ("ANR") progressing through positions of increasing responsibility and authority in the following departments: Special Projects, General Accounting, General Ledger Operations, Gas Accounting and finally, Supervisor – Gas Accounting and Control with responsibility for the monthly invoicing of all the pipeline's sales customers.

In October 1987, I accepted a position with MGUC's predecessor, Aquila, Inc., d/b/a Aquila Networks – MGU ("MGU/Aquila") as a Tariff and Contract Administrator, where I was responsible for monitoring and controlling gas purchase contracts related to system supplies and end-user transportation. In November 1989, I was promoted to Federal Regulatory Analyst responsible for monitoring and analyzing activities at the Federal Energy Regulatory Commission ("FERC") to determine their impact upon MGU/Aquila, as well as developing and recommending the positions that MGU/Aquila would take in various

proceedings. In July 1990, I was promoted to the position of Manager – Federal Regulatory Affairs.

In August 1994, I accepted a position with SEMCO Energy Gas Company ("SEMCO") as Manager, Federal Regulatory Affairs.

In June 2001, I returned to MGU/Aquila, in my current position. In this position, I am responsible for regulatory activities within the state, including: (1) insuring compliance with all Michigan Public Service Commission ("MPSC" or "Commission") orders; (2) acting as a liaison for the Company with the MPSC Staff and interveners; (3) serving as a representative on the Efficiency United Steering Committee (the state appointed administrator for energy optimization ("EO") programs). In addition to these duties, I am responsible for preparing analyses related to and setting the Company's monthly Gas Cost Recovery ("GCR") factors, preparing the monthly 45-Day report, GCR plan and reconciliation filings, as well as EO filings.

Q HAVE YOU PREVIOUSLY TESTIFIED IN ANY REGULATORY PROCEEDINGS BEFORE THE MPSC?

A Yes. I have testified before the MPSC in numerous MGU/Aquila, SEMCO and MGUC GCR plan and reconciliation proceedings, and in connection with take-or-pay proceedings involving Order Nos. 500 and 528. I sponsored testimony in SEMCO's 1996 general rate proceeding (Case No. U-11220); MGU/Aquila's 2002 general rate proceeding (Case No. U-13470); and MGUC's general rate proceedings (Case Nos. U-15549, U-15990, U-17273 and U-17880). I also sponsored testimony in MGUC's EO plan and reconciliation proceedings (Case Nos. U-15891, U-16291, U-16292, U-16752, U-16731, U-17290, U-17360, U-17609, U-17789 and U-17842).

Q HAVE YOU TESTIFIED BEFORE ANY OTHER REGULATORY BODIES?

A Yes. I have testified before the FERC on behalf of SEMCO in ANR's general rate case proceeding in Docket No. RP94-043.

Q PLEASE DESCRIBE MGUC.

A MGUC is a public utility engaged in the business of purchasing, storing, transporting, distributing and selling natural gas to the public in the lower peninsula of the state of Michigan. As of November 30, 2015, MGUC served approximately 168,400 customers, including 135,600 residential customers, 10,000 commercial and small industrial customers, 25 large industrial customers and 22,800 transportation and Gas Customer Choice ("GCC") customers. Such customers are located in over 50 cities and villages and in 93 townships located in the southern and western portions of the state of Michigan between Lake Erie on the east and Lake Michigan on the west.

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A I am presenting testimony and exhibits supporting:

I. MGUC's 2016-2017 forecast of normal load requirements for the Company's service territory, related to:

   a. Company-Use, Gas-In-Kind and Lost-And-Unaccounted-For volumes; and

   b. Transportation customer loads.

II. The forecast of MGUC's projected 2015-2016 over/(under)-recoveries applicable to both GCR and Reservation Charges.

III. Calculation of the Base GCR Factor and derivation of MGUC's Reservation Charge for the period of April 1, 2016 through March 31, 2017.

IV. Interstate pipeline services that are available to MGUC.

V. Regulatory proceedings in which MGUC is participating or monitoring, to minimize costs to GCR customers.

Q IN CONNECTION WITH YOUR TESTIMONY, ARE YOU SPONSORING ANY EXHIBITS?

A I am sponsoring the following exhibits, all of which were prepared by me or under my direction and supervision:

Exhibits	Content
A-14 (DJT-1)	Annual Base GCR Factors and Reservation Charge for the 12-Month Period Ending March 31, 2017.
A-15 (DJT-2)	Forecasted Load Statistics for the 12-Month Periods 2016-2017 through 2020-2021.
A-16 (DJT-3)	Calculation of the Projected Over/(Under)-Recovered Balances as of March 31, 2016.
A-17 (DJT-4)	Derivation of the Base GCR Factor and Reservation Charge
A-18 (DJT-5)	Transportation, No-Notice and Storage Service options available.
A-19 (DJT-6)	Legal and Regulatory actions monitored/taken by MGUC at the Federal Level to Minimize the Cost of Purchased Gas.
A-20 (DJT-7)	Contingency Matrix

Q PLEASE DESCRIBE EXHIBIT A-14 (DJT-1).

A Page 1 of Exhibit A-14 (DJT-1) is MGUC's proposed tariff sheet which reflects for the 2016-2017 GCR Plan period the Base GCR Factor of $3.3249 per Mcf, with a Reservation Charge of $0.6303 per Mcf. The Reservation Charge is included in the Base GCR Factor and will be reflected as a separate line item on the bills of GCR and GCC customers. This is reflected on Tariff Sheet No. D-1.00 enclosed as page 2 of Exhibit A-14 (DJT-1). The Base GCR Factor and Reservation Charge were derived, as described below, from (1) the commodity costs and fixed pipeline demand/supply reservation costs described and supported by Ms. Mead in her Direct Testimony and Exhibits and (2) the following forecasted information for the 2016-2017 period, which will be supported by my Direct Testimony and Exhibits:

- Company-Use, Gas-In-Kind and Lost-And-Unaccounted-For gas; and

- Projected 2015-2016 over/(under)-recoveries.

I. MGUC'S 2016-2017 FORECAST OF NORMAL LOAD REQUIREMENTS FOR THE COMPANY'S SERVICE TERRITORY

Q HOW DID MGUC FORECAST USE FOR THE NORMAL LOAD REQUIREMENTS OF THE GCR AND GCC CUSTOMERS?

A The methodology that was utilized to forecast the Company's normal customer loads is presented and sponsored by Kevin R. Kuse in his Direct Testimony and Exhibits. For the 2016-2017 GCR Plan period, the Annual Use per Residential Customer is projected to be 85.7 Mcf, an decrease of 0.2% from the previous year's forecast.

Q HOW DID YOU ARRIVE AT THE FORECASTED VOLUMES FOR COMPANY-USE, GAS-IN-KIND AND LOST-AND-UNACCOUNTED-FOR GAS?

A The forecasted Company-Use gas volumes are based on a review of recent historical volumes used at MGUC's general offices and plant buildings, station heaters, and various facilities at MGUC's storage and production fields. The forecasted Lost-and-Unaccounted-For and Gas-In-Kind volumes are also based on historical levels. Page 2 of Exhibit A-15 (DJT-2) details the forecasted system requirements for Company Use, Gas-In-Kind and Lost-and-Unaccounted-For volumes for the 2016-2017 period.

Q PLEASE EXPLAIN PAGE 1 OF EXHIBIT A-17 (DJT-4).

A Page 1 of Exhibit A-17 (DJT-4) lists the forecasted billed GCR volumes for the 2016-2017 GCR Plan period.

Q HOW WERE THE FORECASTED BILLED GCR VOLUMES DETERMINED?

A The forecasted billed GCR volumes, Column (i), were calculated using the forecasted total GCR customer requirement from Column (b) (as reflective of line 16 of page 2 of Exhibit A-15 (DJT-2), less Company-Use, column (c); plus Gas-In-Kind, column (d); less Lost-and-

Unaccounted-For volumes, column (e); less current month unbilled volumes, column (g); plus the prior month's unbilled volumes, column (h). That is, column (b) plus columns (d) and (h), minus the sum of columns (c), (e), and (g).

Q HOW WERE THE FORECASTED UNBILLED VOLUMES CALCULATED?

A The forecasted current month's unbilled volumes were calculated by taking a percentage of the monthly calendar sales for the Residential, Multi-Family and General Service Rate classes. MGUC bills its Residential, Multi-Family and Small Commercial and Industrial customers throughout the month in 20 cycles for the previous 26-35 days' consumption. The monthly unbilled percentages displayed on workpaper WP A-17-1 were derived from actual experience during the period of September 2014 through August 2015. This methodology is consistent with the methodology that has been utilized in the past nine plan cases (Case Nos. U-15040, U-15450, U-15700, U-16145, U-16481, U-16920, U-17130, U-17331, and U-17690).

Q HAS MGUC FORECASTED ADDITIONAL GCR SALES AS A RESULT OF TECHNOLOGICAL ADVANCEMENTS SUCH AS NATURAL GAS COOLING OR NATURAL GAS VEHICLES?

A No such increases in load have been forecasted. Quantifying the impacts that technological advancements may have on MGUC's GCR load requirement in the future would be extremely speculative and, therefore, would likely be inaccurate.

Q DOES THE COMPANY'S GCR SALES FORECAST INCLUDE GCC VOLUMES?

A No it does not. The Company specifically excludes GCC volumes from its GCR sales forecast. The GCR sales forecast reflects the following classes of service: Residential, Multi-Family, Small General (Commercial), Large General (Industrial) and Gas Lights.

Forecasts were developed for MGUC's GCR and GCC loads by Mr. Kuse, as detailed in his Direct Testimony and Exhibits.

Q HAVE THE GCC REQUIREMENTS SHOWN ON PAGE 1 OF EXHIBIT A-10 (KRK-3) BEEN EXCLUDED FROM THE SALES USED TO DETERMINE THE 2016-2017 GCR FACTOR?

A Yes, The GCC volumes have been excluded from the total volumes used to derive the Gas Commodity Charge portion of the Base GCR Factor because MGUC does not provide gas supply service to these customers under normal conditions. Consistent with the Commission's Order in consolidated Case Nos. U-16148 and U-16513, GCR volumes play a role in determining the Reservation Charge portion of the Base GCR Factor because MGUC provides distribution and supplier of last resort ("SOLR") service to GCC customers within the parameters of the Company's Choice tariff.

Q HAS THE METHODOLOGY UTILIZED TO FORECAST THE LOAD REQUIREMENTS FOR TRANSPORTATION CUSTOMERS AS SHOWN ON PAGES 7 THROUGH 9 OF EXHIBIT A-15 (DJT-2) BEEN REVISED?

A No, it has not. The methodology is consistent with forecasts submitted over the past several years, as prepared by the two Customer Relations Managers responsible for MGUC's industrial accounts. It is simply a forecast of the customer's projected load for the 2016-2017 period, based upon recent discussions with the respective customers and a review of their historical and recent consumption, taking into account any known equipment or process changes.

Q WHY HAVE THE TRANSPORTATION CUSTOMER REQUIREMENTS SHOWN ON PAGES 7 THROUGH 9 OF EXHIBIT A-15 (DJT-2) BEEN EXCLUDED FROM THE SALES USED TO DETERMINE THE 2016-2017 GCR FACTOR?

A The Transportation volumes have been excluded from the total volumes used in deriving the GCR factor set forth on Exhibit A-14 (DJT-1) because MGUC does not provide gas supply service to Transportation customers. MGUC provides only a transportation service within the parameters of its tariff.

Q WHAT IS THE LIKELIHOOD THAT SOME OF MGUC's CURRENT GCC OR TRANSPORTATION CUSTOMERS WILL SWITCH BACK TO GCR SERVICE AT SOME POINT IN THE FIVE-YEAR FORECAST PERIOD?

A This is an unknown. There is no accurate way to project customers transferring from GCC or transportation service back to GCR service.

Q WHAT IS THE POSSIBILITY OF CUSTOMERS SWITCHING FROM GCR TO GCC OR TRANSPORTATION SERVICE?

A Once again, it is difficult to accurately forecast the number of customers who might switch to GCC service. Such decisions will depend, in part, upon the Company's GCR factor compared to the market price of gas and how successful alternative gas suppliers ("AGS") are in their efforts to solicit customer enrollments. As of December 1, 2015, MGUC has nine AGS's participating in its GCC program, and their solicitation methods include direct mailings, customer fliers, telemarketing, door-to-door solicitation and "word of mouth."

During the winter of 2013-2014, many GCC customers experienced significant increases in the price that they paid for their gas supply service. As a result, MGUC experienced large numbers of customers returning to GCR service. For purposes of the 2016-2017 forecast, MGUC has projected the return of some customers to GCR services.

Concerning Transportation service, MGUC has incorporated into its forecast those customers that have expressed an interest in switching from GCR service.

II. FORECAST OF MGUC'S PROJECTED 2015-2016 OVER/UNDER-RECOVERIES

Q HAS MGUC INCLUDED A PROJECTED GCR COST UNDER-RECOVERY FOR THE 2015-2016 GCR PERIOD?

A Yes. Exhibit A-16 (DJT-3), page 1 of 2 details MGUC's projected 2015-2016 gas cost under-recovery of $496,771. The projected under-recovery was calculated using the 2015-2016 actual activity for the months of April through November. As of November 30, 2015, MGUC finds itself in an over-recovered position of $1,840,835. Forecasted volumes were used for the December through March period. The forecasted volumes were multiplied by the commodity cost difference in column (e) of Exhibit A-16 (DJT-3), page 1 of 2. The commodity cost difference in column (e) results by taking the GCR factor that the Company anticipates billing, column (b), and subtracting the projected commodity gas cost and demand charge per Mcf in column (d). The cost is developed using a current NYMEX, known fixed price gas packages to be purchased, and the 2015-2016 Plan case projections for the months of December through March. MGUC will strive to minimize the under-recovery by making appropriate monthly adjustments to its GCR factor over the remaining months of the current GCR period.

Q HAS MGUC INCLUDED A PROJECTED RESERVATION CHARGE OVER-RECOVERY FOR THE 2015-2016 GCR PERIOD?

A Yes. Exhibit A-16 (DJT-3), page 2 of 2 details MGUC's projected 2015-2016 Reservation Charge over-recovery of $1,102,928. The projected over-recovery was calculated using the 2015-2016 actual activity for the months of April through November. As of November 30, 2014, MGUC finds itself in an over-recovered position of $240,799. Forecasted volumes were used for the December through March period. The forecasted volumes were multiplied by the commodity cost difference in column (f) of Exhibit A-16 (DJT-3), page 2 of 2. The cost difference in column (f) results by taking the Reservation Charge that the

Company anticipates billing, column (c), and subtracting the projected reservation costs and demand charge per Mcf in column (e).

III. CALCULATION OF THE BASE GCR FACTOR AND RESERVATION CHARGE

Q PLEASE EXPLAIN PAGE 4 OF EXHIBIT A-17 (DJT-4).

A Page 4 of Exhibit A-17 (DJT-4) shows the derivation of the Company's proposed Reservation Charge of $0.6303 per Mcf, its proposed Gas Commodity cost of $2.6946 per Mcf and the resulting Annual Base GCR Factor of $3.3249 per Mcf, as well as the related annual revenues generated by that factor.

Q HOW WERE THE TOTAL PROJECTED 2016-2017 GCR COSTS ON PAGE 2 OF EXHIBIT A-17 (DJT-4), LINE 7, DETERMINED?

A The projected 2016-2017 costs were determined by first taking the sum of the Total Supplier Commodity costs, the Pipeline Demand/Supply/Reservation costs, the Net Cost of Storage (Injection)/Withdrawals and the estimated unrealized Hedging gains and losses (which are taken from pages 1 and 4 of Exhibit A-7 to Ms. Mead's Direct Testimony), less the cost of Company-Use and Lost-and-Unaccounted-For gas, plus the cost of Gas-In-Kind volumes, to derive the Total Cost of Gas Sold on line 8. Company-Use, Lost-and-Unaccounted-For and Gas-In-Kind were priced at the projected 2016-2017 average GCR cost of gas sold per Mcf, consistent with the pricing methodology used by MGUC in previous GCR cases. A projected Reservation Charge over-recovery for 2015/2016 was subtracted from and a projected GCR under-recovery for 2015/2016 was added to the Total Cost of Gas Sold in order to derive the Total Projected 2016-2017 Costs on line 11.

Q PLEASE DESCRIBE HOW THE 2016-2017 RESERVATION CHARGE AND BASE GCR FACTOR WERE DERIVED.

A As detailed on pages 2 and 4 of Exhibit A-17 (DJT-4), the proposed Reservation Charge was determined by dividing the net of the projected 2016-2017 Pipeline Demand/Supply/Reservation costs less the projected 2015-2016 over-recovered Reservation Charges by the forecasted Total Sales and GCC volumes.

The Total Cost of Gas Sold was then reduced by the Reservation Revenues to be collected through application of the Reservation charge to arrive at the Commodity Cost of Gas Sold. The Commodity Cost of Gas Sold is then divided by the Total Calendar Month Sales to arrive at the Gas Commodity Cost per Mcf.

The Base GCR Factor of $3.3249 per Mcf is simply the sum of the Reservation Charge per Mcf and the Gas Commodity Cost per Mcf. In other words, for GCR customers, the Reservation Charge is a component of the Base GCR Factor, although it appears as a separate line item on the GCR and GCC customers' bills.

Q PLEASE EXPLAIN PAGE 3 OF EXHIBIT A-17 (DJT-4).

A Page 3 of Exhibit A-17 (DJT-4) sets forth the revenues to be collected through implementation of MGUC's proposed 2016-2017 Base GCR Factor of $3.3249 per Mcf. The proposed 2016-2017 Base GCR Factor is multiplied by projected billed volumes to determine the GCR revenues collected. That is, column (b) times column (c) equals column (d). The GCR revenues collected are then adjusted by March 2016 unbilled revenues to be collected in 2016 (line 14) and March 2017 unbilled revenues to be collected in 2017 (line 15).

IV. FIVE-YEAR FORECAST OF GCR AND GCC CUSTOMER NORMAL LOAD REQUIREMENTS

Q PLEASE BRIEFLY DESCRIBE THE PORTION OF EXHIBIT A-15 (DJT-2) THAT SETS FORTH THE COMPANY'S FIVE-YEAR FORECAST OF THE NORMAL LOAD REQUIREMENTS FOR GCR AND GCC CUSTOMERS.

A Page 1 of Exhibit A-15 (DJT-2) sets forth a summary of GCR customer load requirements for each 12-month period in the Five-Year Forecast. Pages 2 through 6 set forth total Company GCR load requirements by month for each 12-month period, 2016-2017 through 2020-2021. Pages 7 through 9 list known transportation customers as of October 2015 and their forecasted load requirements. All forecasted volumes for the five-year forecast were derived using the same methodologies as were used for the 2016-2017 period, which I described earlier in my testimony.

V. INTERSTATE PIPELINE SERVICES AVAILABLE TO MGUC

Q PLEASE EXPLAIN EXHIBIT A-18 (DJT-5).

A Exhibit A-18 (DJT-5) is a summary of the interstate pipeline services that are available to MGUC. There are no known changes being contemplated by the interstate pipelines to either their rates or service offerings at this time.

VI. REGULATORY PROCEEDINGS IN WHICH MGUC IS PARTICIPATING OR MONITORING TO MINIMIZE COSTS TO GCR CUSTOMERS

Q WHAT IS MGUC'S PHILOSOPHY CONCERNING ITS PARTICIPATION IN FEDERAL REGULATORY PROCEEDINGS INITIATED BY PIPELINES THAT SERVE OR COULD SERVE ITS CUSTOMERS?

A MGUC believes it is important to maintain an active presence at FERC to protect the interests of its customers. Currently, the interstate pipelines that directly serve MGUC are ANR and Panhandle Eastern Pipe Line ("PEPL"). Trunkline Gas Company is another interstate pipeline capable of serving certain portions of MGUC's system, but does not currently provide service to MGUC.

MGUC may participate in these proceedings individually, jointly with other WEC affiliates, or as part of a larger industry group, such as the American Gas Association, depending upon the specifics of the case.

Q IN WHAT TYPES OF FEDERAL REGULATORY PROCEEDINGS DOES MGUC GENERALLY INTERVENE OR OTHERWISE PARTICIPATE?

A MGUC actively participates in any general rate case filings made by its pipeline suppliers with the FERC. Neither ANR nor PEPL has filed general rate case proceedings for some time, nor are they required to file in the near future. There are, however, several types of filings that can have an impact on the cost of gas. Examples include: annual filings to true-up the actual fuel usage; the pass-through of penalty revenues in excess of costs; and various other FERC approved periodic rate adjustments to true-up actual costs, etc.

Q IN WHICH FERC PROCEEDINGS HAS OR IS MGUC CURRENTLY PARTICIPATING?

A MGUC is participating in the Federal dockets identified in Exhibit A-19 (DJT-6).

Q PLEASE EXPLAIN EXHIBIT A-20 (DJT-7).

A Exhibit A-20 (DJT-7) represents the Company's proposed Contingency Matrix. This simplified, one-step Contingency Matrix was developed by Staff and adopted by the Company in Case No. U-17331.

The Contingency Matrix is intended to be utilized by the Company in the following manner:

i. On an ongoing basis the Company monitors the NYMEX futures to determine if prices have increased above the levels that were utilized in developing the filed GCR Plan.

ii. If the 5-day average for the upcoming month exceeds the level utilized in the Plan case, i.e. the first 5 business days of December, then the Company will

re-run the five day average of prices for the remainder of the GCR period; utilizing the closed prices for those months that have already expired.

iii. The average of all prices for the GCR period is then determined and compared to the "Plan NYMEX" figure.

iv. The difference between the Updated NYMEX figure and the Plan figure is then utilized to identify the incremental adjustment to be added to the base GCR Factor.

v. The incremental amount is then added to the base GCR factor to arrive at a new GCR factor to be implemented for the upcoming month.

In subsequent months, the Company will repeat the process identified in steps i through v above. If the average pricing under the matrix ever falls below the base GCR factor, the Company may or may not lower the GCR factor below the Base level established in the Plan depending upon its over/(under)-recovered position.

Q DOES THIS COMPLETE YOUR PREFILED TESTIMONY?

A Yes, it does.

MICHIGAN GAS UTILITIES CORPORATION
M.P.S.C. NO. 2 - GAS

_____ Revised Sheet No. D-2.00
Replaces _____ Revised Sheet No. D-2.00

D3. GAS COST RECOVERY FACTORS

The listed monthly Gas Cost Recovery Factors are authorized pursuant to Rule C9, Gas Cost Recovery Clause.

Billing Month	Authorized Base Factor $/Mcf	Maximum GCR Factor Allowed	Actual Factor Billed $ Mcf
April 2016	**$3.3249**		
May	**3.3249**		
June	**3.3249**		
July	**$3.3249**		
August	**3.3249**		
September	**3.3249**		
October	**$3.3249**		
November	**3.3249**		
December	**3.3249**		
January 2017	**$3.3249**		
February	**3.3249**		
March	**3.3249**		

The Maximum GCR Factor Allowed is based upon changes in the NYMEX and adjusted according to Sheets D3.00 or D4.00

The Company will file a revised Sheet No. D-2.00 monthly or as necessary to reflect the factor to be billed the following month.

The Company will file by December 31, 2016 for maximum Gas Cost Recovery Factors for April 2017 through March 2018. The Gas Cost Recovery Factor to be charged beginning April 2017 is authorized pursuant to §6(h)(9) of 1982 PA 304, as amended, MCL 460.6h et seq.

In addition to the above Gas Cost Recovery Factors, rates are subject to the supplemental charges shown on Sheet Nos. D-1.00, D-1.01 and D-1.02.

The GCR is composed of the following cost components:

	Authorized Base Factor	Actual Factor Billed
Reservation Charge	**$0.6303 per Mcf**	$_.____ per Mcf
Gas Commodity Charge	**$2.6946 per Mcf**	$_.____ per Mcf

MICHIGAN GAS UTILITIES CORPORATION
M.P.S.C. NO. 2 - GAS

SECTION D
RATE SCHEDULES

D1. GENERAL TERMS AND CONDITIONS OF THE TARIFF

(1) Controlled service.

All rates are subject to all provisions in Rule C2. of the Rules and Regulations of The Company which are applicable to priority of service hereunder.

(2) Territory served.

All rates apply in the territory served by the Company, comprising the cities, villages and townships in all Districts in the applicable Rules and Regulations of the Company except where specifically noted.

D2. SUPPLEMENTAL CHARGES

Each rate schedule may be subject to supplemental charges under Rule C11, Customer Attachment Program, a Reservation Charge and Energy Optimization ("EO") surcharges required by Public Act 295, as detailed below:

RESERVATION CHARGE - this charge allows for the recovery of costs related to the assets necessary to provide peak-day coverage and for the utility to serve as the "supplier of last resort" from Gas Customer Choice program customers, as required by the Commission in Case No. U-15929. The Reservation Charge is also a base component of the GCR Factor, which also is comprised of a Commodity Charge.

Reservation Charge
$0.6303 per Mcf

ENERGY OPTIMIZATION Surcharge - this charge permits, pursuant to Section 91(4) of 2008 PA 295, the adjustment of rates, to allow for recovery of the payments made by the Company in compliance with Section 91 (1) of 2008 PA 295.

Customer Class	EO Surcharge
Residential	$ 0.1696 per Mcf
Multi-Family	$ 0.1696 per Mcf
Small General Service	$ 4.71 per meter, per month
Large General Service	$ 109.74 per meter, per month
Commercial Lighting	$ 5.32 per contract, per month
Special Contracts	$ 183.21 per month
Transportation -	
TR-1	$ 40.54 per meter, per month
TR-2	$ 124.77 per meter, per month
TR-3	$ 523.64 per meter, per month

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION

Case No. U-17940
Exhibit: A-15 (DJT-2) Page 1 of 9
Witness: David J. Tyler

GCR Sales Forecast 2016/2017 - 2020/2021

Line		2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
	Annual Average Number of Customers					
1	Residential	137,397	138,617	139,024	139,134	139,219
2	Multi-Family	120	121	121	122	122
3	General Service (Commerical, Industrial & Lights)	10,497	10,691	10,748	10,762	10,781
4	Total GCR	148,014	149,429	149,893	150,018	150,122
5	Transportation	141	141	141	141	141
6	Choice	21,392	20,180	19,874	19,874	19,874
7	System Total	169,547	169,750	169,908	170,033	170,137
	Annual Use Per Customer-Mcf					
8	Residential	85.7	85.3	85.0	85.0	84.5
9	Multi-Family	147.1	146.2	146.0	145.4	144.9
10	General Service (Commerical, Industrial & Lights)	416.0	413.3	411.0	411.0	407.0
	Annual Sales Volumes-MMcf					
11	Residential	11,826.4	11,866.4	11,838.5	11,846.1	11,781.6
12	Multi-Family	17.6	17.7	17.7	17.7	17.7
13	General Service (Commerical, Industrial & Lights)	4,391.9	4,435.3	4,422.4	4,425.8	4,390.7
14	Total	16,235.8	16,319.3	16,278.5	16,289.7	16,190.0
15	**Company Use, Gas In Kind, L&U**	157.6	157.3	157.0	157.0	156.5
16	**Total GCR Sendout**	16,393.4	16,476.6	16,435.5	16,446.7	16,346.5
17	Transportation & Choice	15,988.5	15,822.5	15,800.4	15,800.4	15,800.4
18	**Total System Throughput**	32,381.9	32,299.1	32,235.9	32,247.0	32,146.8

Michigan Public Service Commission
MICHIGAN GAS UTILITIES CORPORATION

Case No. U-17940
Exhibit: A-15 (DJT-2) Page 2 of 9
Witness: David J. Tyler

GCR Sales Forecast 2016/2017 - 2020/2021
2016/2017

Total Company

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	2016/2017 TOTAL
	(a)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(b)	(c)	(d)	(n)
	Customers Per Revenue Class													
1	Residential	137,286	136,928	136,390	136,091	136,192	136,574	137,269	138,214	138,326	138,398	138,498	138,604	137,397
2	Multi-Family	119	119	119	119	119	120	120	120	120	120	120	120	120
3	General Service	10,424	10,402	10,379	10,386	10,403	10,434	10,506	10,590	10,606	10,584	10,608	10,636	10,497
4	Total GCR	147,829	147,449	146,889	146,597	146,714	147,128	147,895	148,924	149,051	149,102	149,226	149,360	148,014
5	Transportation	140	140	140	140	140	140	140	140	140	142	142	142	141
6	Choice	21,993	21,882	21,771	21,661	21,552	21,443	21,335	21,227	21,120	21,013	20,907	20,801	21,392
7	System Total	169,962	169,471	168,800	168,398	168,406	168,711	169,370	170,291	170,311	170,257	170,275	170,303	169,547
	Mcf Per Customer													
8	Residential	7.5	3.8	1.8	1.7	1.6	2.0	4.7	7.6	13.7	15.1	13.4	12.6	85.7
9	Multi-Family	11.5	7.4	5.3	4.5	4.4	5.3	9.8	14.5	21.9	23.8	20.4	18.3	147.1
10	General Service	36.5	18.2	6.8	8.4	7.7	10.7	23.0	38.6	68.0	74.3	65.1	58.6	416.0
	Mcf Sales Per Revenue Class													
11	Residential	1,036,046	521,991	250,049	233,995	216,174	273,157	642,717	1,055,411	1,899,859	2,095,805	1,855,922	1,745,239	11,826,364
12	Multi-Family	1,372	886	627	541	519	639	1,180	1,737	2,632	2,856	2,443	2,192	17,624
13	General Service	380,983	189,523	71,001	87,319	80,379	111,959	241,460	408,619	720,690	786,213	690,343	623,362	4,391,851
14	Total GCR Customers	1,418,401	712,400	321,677	321,855	297,072	385,755	885,357	1,465,767	2,623,181	2,884,874	2,548,708	2,370,793	16,235,840
15	Company-Use, Gas-in-Kind, Lost & Unact'd-For	13,000	8,900	7,200	4,100	6,800	2,600	11,500	15,700	20,200	24,200	21,900	21,500	157,600
16	**Total GCR Requirement**	1,431,401	721,300	328,877	325,955	303,872	388,355	896,857	1,481,467	2,643,381	2,909,074	2,570,608	2,392,293	16,393,440
17	Transportation & Choice	1,200,144	975,557	877,148	801,888	884,578	836,027	1,199,269	1,469,837	1,688,696	2,152,316	2,070,424	1,832,606	15,988,491
18	**Total System Throughput**	2,631,545	1,696,857	1,206,025	1,127,843	1,188,450	1,224,382	2,096,126	2,951,305	4,332,078	5,061,390	4,641,033	4,224,899	32,381,931

Michigan Public Service Commission
MICHIGAN GAS UTILITIES CORPORATION

Case No. U-17940
Exhibit: A-15 (DJT-2) Page 3 of 9
Witness: David J. Tyler

GCR Sales Forecast 2016/2017 - 2020/2021
2017/2018

Total Company

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	2017/2018 TOTAL
	(a)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(b)	(c)	(d)	(n)
	Customers Per Revenue Class													
1	Residential	138,468	138,215	137,824	137,616	137,712	138,023	138,573	139,313	139,417	139,404	139,411	139,423	138,617
2	Multi-Family	120	120	120	120	120	120	121	121	121	121	121	121	121
3	General Service	10,631	10,623	10,614	10,623	10,637	10,659	10,706	10,758	10,772	10,751	10,756	10,764	10,691
4	Total GCR	149,219	148,959	148,559	148,359	148,469	148,803	149,400	150,192	150,310	150,276	150,288	150,308	149,429
5	Transportation	140	140	140	140	140	140	140	140	140	142	142	142	141
6	Choice	20,696	20,591	20,487	20,384	20,281	20,178	20,076	19,975	19,874	19,874	19,874	19,874	20,180
7	System Total	170,055	169,690	169,186	168,883	168,890	169,121	169,616	170,307	170,324	170,292	170,304	170,324	169,750
	Mcf Per Customer													
8	Residential	7.2	3.6	1.8	1.7	1.6	2.1	4.9	7.9	13.8	15.1	13.3	12.2	85.3
9	Multi-Family	11.5	7.4	5.3	4.5	4.3	5.3	9.8	14.4	21.8	23.6	20.2	18.1	146.2
10	General Service	34.8	17.4	6.7	8.2	7.5	10.8	23.8	39.5	68.2	74.3	64.9	57.3	413.3
	Mcf Sales Per Revenue Class													
11	Residential	1,003,740	503,589	245,913	235,464	220,959	286,382	674,329	1,102,188	1,926,773	2,107,816	1,857,365	1,701,854	11,866,371
12	Multi-Family	1,375	889	630	544	520	641	1,184	1,742	2,638	2,857	2,443	2,191	17,654
13	General Service	370,120	184,798	70,626	86,884	80,069	114,761	254,809	424,627	734,598	799,145	697,778	617,051	4,435,265
14	Total GCR Customers	1,375,235	689,276	317,169	322,892	301,548	401,784	930,322	1,528,557	2,664,008	2,909,818	2,557,586	2,321,096	16,319,290
15	Company-Use, Gas-in-Kind, Lost & Unact'd-For	12,700	8,700	7,200	4,100	6,800	2,600	11,700	16,000	20,300	24,200	21,800	21,200	157,300
16	**Total GCR Requirement**	1,387,935	697,976	324,369	326,992	308,348	404,384	942,022	1,544,557	2,684,308	2,934,018	2,579,386	2,342,296	16,476,590
17	Transportation & Choice	1,187,891	968,502	869,728	798,944	880,575	832,115	1,187,953	1,449,198	1,661,500	2,122,108	2,048,229	1,815,791	15,822,534
18	**Total System Throughput**	2,575,826	1,666,478	1,194,097	1,125,936	1,188,923	1,236,499	2,129,976	2,993,755	4,345,809	5,056,126	4,627,615	4,158,087	32,299,125

Michigan Public Service Commission
MICHIGAN GAS UTILITIES CORPORATION

Case No. U-17940
Exhibit: A-15 (DJT-2) Page 4 of 9
Witness: David J. Tyler

GCR Sales Forecast 2016/2017 - 2020/2021
2018/2019

Total Company

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	2018/2019 TOTAL
	(a)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(b)	(c)	(d)	(n)
	Customers Per Revenue Class													
1	Residential	139,249	138,988	138,622	138,394	138,400	138,570	138,922	139,421	139,433	139,422	139,427	139,437	139,024
2	Multi-Family	121	121	121	121	121	121	121	121	121	121	121	121	121
3	General Service	10,753	10,741	10,729	10,726	10,726	10,731	10,750	10,771	10,771	10,759	10,763	10,767	10,748
4	Total GCR	150,123	149,850	149,472	149,241	149,247	149,422	149,793	150,313	150,325	150,302	150,311	150,325	149,893
5	Transportation	140	140	140	140	140	140	140	140	140	142	142	142	141
6	Choice	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874
7	System Total	170,137	169,864	169,486	169,255	169,261	169,436	169,807	170,327	170,339	170,318	170,327	170,341	169,908
	Mcf Per Customer													
8	Residential	7.0	3.5	1.7	1.7	1.6	2.1	5.0	8.1	13.8	15.1	13.3	12.0	85.0
9	Multi-Family	11.4	7.3	5.2	4.5	4.3	5.3	9.8	14.4	21.7	23.7	20.3	18.2	146.0
10	General Service	33.8	16.9	6.5	8.0	7.4	10.7	24.0	39.6	67.9	74.5	64.9	56.8	411.0
	Mcf Sales Per Revenue Class													
11	Residential	975,356	488,032	241,794	236,225	223,812	294,666	691,039	1,123,073	1,925,983	2,112,101	1,856,633	1,669,742	11,838,456
12	Multi-Family	1,374	888	629	543	519	641	1,182	1,737	2,631	2,868	2,452	2,198	17,662
13	General Service	363,167	181,451	69,730	85,953	78,956	115,033	258,230	426,308	731,301	801,764	698,771	611,712	4,422,375
14	Total GCR Customers	1,339,896	670,372	312,153	322,721	303,287	410,339	950,452	1,551,118	2,659,914	2,916,733	2,557,856	2,283,652	16,278,493
15	Company-Use, Gas-in-Kind, Lost & Unact'd-For	12,500	8,600	7,100	4,100	6,800	2,700	11,800	16,100	20,300	24,200	21,800	21,000	157,000
16	**Total GCR Requirement**	1,352,396	678,972	319,253	326,821	310,087	413,039	962,252	1,567,218	2,680,214	2,940,933	2,579,656	2,304,652	16,435,493
17	Transportation & Choice	1,180,121	964,577	866,181	797,767	879,293	831,171	1,186,130	1,447,529	1,661,493	2,122,106	2,048,228	1,815,790	15,800,385
18	**Total System Throughput**	2,532,517	1,643,549	1,185,434	1,124,588	1,189,380	1,244,210	2,148,382	3,014,747	4,341,708	5,063,039	4,627,884	4,120,442	32,235,878

Michigan Public Service Commission
MICHIGAN GAS UTILITIES CORPORATION

Case No. U-17940
Exhibit: A-15 (DJT-2) Page 5 of 9
Witness: David J. Tyler

GCR Sales Forecast 2016/2017 - 2020/2021
2019/2020

Total Company

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	2019/2020 TOTAL
	(a)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(b)	(c)	(d)	(n)
	Customers Per Revenue Class													
1	Residential	139,305	139,105	138,826	138,653	138,658	138,787	139,055	139,435	139,445	139,439	139,444	139,451	139,134
2	Multi-Family	122	122	122	122	122	122	122	122	122	122	122	122	122
3	General Service	10,762	10,755	10,748	10,747	10,748	10,751	10,763	10,776	10,777	10,771	10,773	10,777	10,762
4	Total GCR	150,189	149,982	149,696	149,522	149,528	149,660	149,940	150,333	150,344	150,332	150,339	150,350	150,018
5	Transportation	140	140	140	140	140	140	140	140	140	142	142	142	141
6	Choice	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874
7	System Total	170,203	169,996	169,710	169,536	169,542	169,674	169,954	170,347	170,358	170,348	170,355	170,366	170,033
	Mcf Per Customer													
8	Residential	6.9	3.4	1.7	1.7	1.6	2.2	5.1	8.2	13.9	15.1	13.5	11.8	85.0
9	Multi-Family	11.3	7.3	5.2	4.5	4.3	5.3	9.7	14.3	21.6	23.5	20.6	18.0	145.4
10	General Service	33.4	16.7	6.4	7.9	7.3	10.7	24.2	39.8	68.0	74.1	66.3	56.1	411.0
	Mcf Sales Per Revenue Class													
11	Residential	954,784	476,211	237,623	236,487	225,543	300,815	704,914	1,141,812	1,932,356	2,106,989	1,888,012	1,640,577	11,846,123
12	Multi-Family	1,378	891	632	546	521	643	1,183	1,740	2,634	2,863	2,509	2,194	17,734
13	General Service	358,908	179,430	68,717	85,422	78,330	115,390	260,760	428,822	732,904	797,589	714,576	604,949	4,425,796
14	Total GCR Customers	1,315,069	656,533	306,972	322,455	304,394	416,847	966,858	1,572,374	2,667,893	2,907,441	2,605,097	2,247,720	16,289,653
15	Company-Use, Gas-in-Kind, Lost & Unact'd-For	12,400	8,500	7,100	4,100	6,800	2,700	11,800	16,200	20,300	24,200	22,100	20,800	157,000
16	**Total GCR Requirement**	1,327,469	665,033	314,072	326,555	311,194	419,547	978,658	1,588,574	2,688,193	2,931,641	2,627,197	2,268,520	16,446,653
17	Transportation & Choice	1,180,120	964,577	866,181	797,767	879,293	831,171	1,186,130	1,447,528	1,661,491	2,122,102	2,048,241	1,815,787	15,800,387
18	**Total System Throughput**	2,158,586	1,363,414	1,041,487	1,046,715	1,092,820	1,183,202	1,881,005	2,642,490	3,673,375	4,160,881	3,649,563	3,098,632	32,247,040

Michigan Public Service Commission
MICHIGAN GAS UTILITIES CORPORATION

Case No. U-17940
Exhibit: A-15 (DJT-2) Page 6 of 9
Witness: David J. Tyler

GCR Sales Forecast 2016/2017 - 2020/2021
2020/2021

Total Company

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	2020/2021 TOTAL
	(a)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(b)	(c)	(d)	(n)
	Customers Per Revenue Class													
1	Residential	139,349	139,197	138,983	138,850	138,853	138,952	139,159	139,450	139,457	139,452	139,455	139,461	139,219
2	Multi-Family	122	122	122	122	122	122	122	122	122	122	122	122	122
3	General Service	10,775	10,773	10,770	10,770	10,771	10,774	10,782	10,791	10,793	10,791	10,793	10,797	10,781
4	Total GCR	150,246	150,092	149,875	149,742	149,746	149,848	150,063	150,363	150,372	150,365	150,370	150,380	150,122
5	Transportation	140	140	140	140	140	140	140	140	140	142	142	142	141
6	Choice	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874	19,874
7	System Total	170,260	170,106	169,889	169,756	169,760	169,862	170,077	170,377	170,386	170,381	170,386	170,396	170,137
	Mcf Per Customer													
8	Residential	6.7	3.4	1.7	1.7	1.6	2.2	5.1	8.3	13.8	15.1	13.3	11.6	84.5
9	Multi-Family	11.3	7.3	5.2	4.5	4.3	5.3	9.7	14.2	21.5	23.5	20.1	18.0	144.9
10	General Service	32.9	16.5	6.3	7.9	7.2	10.7	24.2	39.6	67.6	74.0	64.4	55.9	407.0
	Mcf Sales Per Revenue Class													
11	Residential	936,848	466,621	234,469	236,688	226,807	304,959	712,851	1,151,294	1,929,930	2,109,142	1,848,573	1,623,467	11,781,649
12	Multi-Family	1,376	890	632	546	521	642	1,182	1,736	2,628	2,870	2,453	2,200	17,676
13	General Service	354,492	177,405	67,771	84,798	77,656	115,045	260,457	427,340	729,258	798,124	694,827	603,479	4,390,651
14	Total GCR Customers	1,292,715	644,917	302,872	322,032	304,984	420,645	974,491	1,580,370	2,661,815	2,910,136	2,545,853	2,229,146	16,189,976
15	Company-Use, Gas-in-Kind, Lost & Unact'd-For	12,300	8,400	7,100	4,100	6,900	2,700	11,900	16,200	20,300	24,200	21,700	20,700	156,500
16	**Total GCR Requirement**	1,305,015	653,317	309,972	326,132	311,884	423,345	986,391	1,596,570	2,682,115	2,934,336	2,567,553	2,249,846	16,346,476
17	Transportation & Choice	1,180,118	964,576	866,180	797,766	879,292	831,170	1,186,128	1,447,526	1,661,487	2,122,102	2,048,224	1,815,787	15,800,355
18	**Total System Throughput**	2,485,133	1,617,893	1,176,152	1,123,898	1,191,176	1,254,515	2,172,519	3,044,096	4,343,603	5,056,438	4,615,777	4,065,633	32,146,831

MICHIGAN PUBLIC SERVICE COMMISSION Case No. U-17940
MICHIGAN GAS UTILITIES CORPORATION Exhibit: A-15 (DJT-2) Page 7 of 9
Tariff Transportation Service Customers Witness: David J. Tyler
GCR Sales Forecast 2016/2017 - 2020/2021

Line	Customer	Current Transportation Contract	2016/2017 Forecast (in Mcf)	Delivery Pipeline
(a)	(b)	(c)	(d)	(e)
1	Abbot Laboratories USA	Apr-14	437,776	ANR
2	ACT Test Panels, Inc	Apr-14	14,300	ANR
3	Airport Schools	Mar-09	17,137	ANR, PEPL
4	Albemarle Corporation	Oct-12	62,284	ANR
5	Allegan General Hospital	Apr-14	8,732	ANR / CP
6	Allegan Public Schools	Aug-14	28,042	ANR / CP
7	Alloy Steel Treating Co. Inc.	Apr-14	13,099	ANR
8	Almond Corporation	Aug-14	96,840	ANR / MichCon
9	Alutech LLC	Apr-14	339,809	ANR
10	Andrews University	May-14	167,779	ANR
11	ASAMA Coldwater Manufacturing	Mar-09	99,329	ANR
12	Aunt Millies Bakeries	Mar-09	25,447	ANR
13	AUSCO Products Inc.	Jul-15	18,696	ANR
14	Automatic Spring Products Corp.	Apr-14	49,612	ANR / MichCon
15	Bay Corrugated Container	Apr-14	66,100	ANR / PEPL
16	Bay Valley Foods, LLC	Mar-09	135,682	ANR / CP
17	Bedford Public School	Mar-09	28,144	ANR / PEPL
18	Berrien County Courthouse & Jail	Apr-14	29,336	ANR
19	BH LLC - Harbor Metal Treating	Mar-09	82,672	ANR
20	Boersen Farms	Feb-10	26,550	ANR / CP
21	Brazing Concepts Inc./Bluewater Corp	Feb-12	44,252	ANR
22	Bronson Plating Company	Apr-14	14,887	ANR
23	Brookside Greenhouse LLC	Nov-14	25,687	ANR / CP
24	Casting Technology Company	Mar-09	231,001	ANR / MichCon
25	Chrysler Group LLC	Jul-13	30,444	ANR
26	CHS Inc. (was Hamilton Farm Bureau)	Mar-09	18,451	ANR / CP
27	City of Monroe	Jul-14	22,552	ANR
28	Clean Tech, Inc.	Apr-14	84,667	ANR
29	Clemens Food Group	Starts 2017	77,500	ANR
30	Coldwater Area Public Schools	Apr-14	34,211	ANR
31	Coloma Frozen Foods	Apr-14	26,604	ANR
32	Community Health Center of Branch County	Apr-14	35,852	ANR
33	ConAgra Foods Packaged Foods LLC	Apr-14	136,936	ANR
34	Continental Dairy Facilities, LLC	Feb-13	429,877	ANR / MichCon
35	Darling Ingredients Inc.	Apr-14	350,747	ANR
36	Detroit Stoker Company	Apr-14	8,782	ANR / PEPL
37	Dundee Schools	Apr-14	25,599	ANR / PEPL
38	Flexible Montisa	Apr-14	9,160	ANR / CP
39	Ford Motor Company Visteon Corporation	Mar-09	119,566	ANR / PEPL
40	Four Star Greenhouse	Mar-09	69,700	ANR / PEPL
41	Freedom Finishing Inc.	Apr-14	16,008	ANR
42	Fruitport Community Schools	Mar-09	18,578	ANR / MichCon
43	Gast Manufacturing Corporation	Oct-15	14,753	ANR
44	Gerdau MACSTEEL Monroe, Inc.	Mar-09	1,184,875	ANR / PEPL
45	Gerken Materials	Mar-09	13,943	ANR / PEPL
46	Grand Flowers Growers	Feb-15	26,199	ANR / CP
47	Grand Haven Area Schools	Apr-14	39,512	ANR / MichCon
48	Grand Haven Board of Power and Light	Apr-14	42,377	ANR / MichCon
49	Grand Haven Powder Coating	Sep-15	8,862	ANR / MichCon
50	Gun Lake Casino	Jul-11	13,678	ANR / CP
51	HC STARCK	Mar-09	161,169	ANR
52	Heidtman Steel	Mar-09	42,614	ANR / PEPL
53	Herman Miller Company	Apr-14	202,605	ANR / MichCon
54	Hillsdale College	Jul-14	91,987	ANR
55	Hillsdale Community Health Center	Apr-14	25,013	ANR
56	Hillsdale Community Schools	Mar-09	16,039	ANR
57	Hillsdale County Medical Care	Apr-14	22,998	ANR
58	Hoffmann Die Cast Corporation	Apr-14	83,479	ANR

Line	Customer	Current Transportation Contract	2016/2017 Forecast (in Mcf)	Delivery Pipeline
(a)	(b)	(c)	(d)	(e)
59	Hofmann Industries Inc.	Apr-14	18,333	ANR
60	Ida Public Schools	Mar-09	12,985	ANR / PEPL
61	JBS Plainwell Inc.	Mar-09	212,842	ANR / CP
62	Jefferson Schools	Mar-09	21,198	ANR / PEPL
63	Johnson Controls Interiors Holding US II LLC	Apr-14	30,643	ANR / PEPL
64	JS Hotel Operations LLC	Apr-15	8,427	ANR
65	JSJ Corporation	Apr-14	22,486	ANR / MichCon
66	Lake Michigan College	Apr-14	32,579	ANR
67	Lakeland Community Hospital Watervliet	Apr-14	19,642	ANR
68	Lakeland Correctional Facility	Mar-09	122,905	ANR
69	Lakeland Regional Health System	Apr-14	131,766	ANR
70	Lakeshore Die Casting	May-14	8,725	ANR
71	Lakeshore Public Schools	Apr-14	20,107	ANR
72	LECO Corporation	Apr-14	114,603	ANR
73	Lehmann Greenhouse	Mar-09	13,505	ANR / PEPL
74	Lievens Brothers Farms	Apr-14	8,623	ANR
75	M&M Die Cast Inc	Apr-14	14,733	ANR
76	Magna Mirrors	Feb-09	7,096	ANR / MichCon
77	Manheim Detroit Auto Auction	Mar-09	27,425	ANR / PEPL
78	Maple Lawn Health Care Facility	Mar-09	9,887	ANR / PEPL
79	Maroa Farms, Inc.	Aug-14	374,647	ANR
80	Mason Consolidated Area Schools	Mar-09	16,469	ANR / PEPL
81	Meijer Inc.	Apr-14	35,173	ANR / PEPL
82	Menasha Corporation	Mar-09	42,573	ANR
83	Mercy-Memorial Hospital	Mar-13	67,816	ANR / PEPL
84	Michigan Cheese Factory	Starts 2017	464,400	ANR
85	Michigan Paving & Materials Co.	Mar-09	147,455	ANR / PEPL
86	Michigan South Central Power Agency	Jun-15	37,706	ANR / PEPL
87	Michigan Tube Swagers and Fabricators Inc.	Apr-14	26,162	ANR / PEPL
88	Midwest II Inc.	Mar-09	41,139	ANR / PEPL
89	Mono Ceramics	Apr-14	7,928	ANR
90	Monroe County Community College	Oct-12	37,501	ANR / PEPL
91	Monroe County Finance Department	Apr-14	22,718	ANR / PEPL
92	Monroe Public Schools	Mar-09	52,208	ANR / PEPL
93	Morgan Olson Corp	Mar-09	41,258	ANR
94	National Galvanizing	Mar-09	223,338	ANR / PEPL
95	New Products Corporation	Apr-14	23,611	ANR
96	North Ottawa Community Hospital	Apr-14	40,342	ANR / MichCon
97	North Shore Manufacturing Corp	Apr-14	15,701	ANR
98	Old Europe Cheese, Inc.	Apr-14	36,723	ANR
99	Otsego Paper Company	Mar-09	1,554,803	ANR / CP
100	PepperCo-USA, Inc.	Jan-15	245,438	ANR
101	Perrigo Company	Mar-15	327,482	ANR / CP
102	Pinnacle Food Group LLC	Apr-14	63,365	ANR
103	Pioneer Metal Finishing	Mar-09	31,197	ANR
104	Plainwell Schools	Apr-14	23,524	ANR / CP
105	Polyply Composites	Apr-14	14,889	ANR / MichCon
106	Premier Die Cast Corporation	Apr-14	101,491	ANR
107	Quality Spring / Togo, Inc.	Apr-14	9,656	ANR
108	Randall Food Products Inc.	Mar-09	17,682	ANR
109	Real Alloy Specification, Inc.	Nov-09	718,134	ANR
110	Recreation Creations/Quality, Inc.	Apr-14	13,797	ANR
111	Rieth-Riley Construction Company	Apr-14	69,021	ANR
112	Robert Bosch LLC - St. Joseph Plant	Apr-14	31,339	ANR
113	Seaver Industries	Apr-14	70,956	ANR / MichCon
114	Sekisui Voltek, Inc.	Mar-09	97,911	ANR
115	Shape Corporation	Jul-14	118,839	ANR / MichCon

Line	Customer	Current Transportation Contract	2016/2017 Forecast (in Mcf)	Delivery Pipeline
(a)	(b)	(c)	(d)	(e)
116	Shawanee Specialty	Mar-09	8,576	ANR
117	Silbond Corporation	Mar-09	59,767	ANR
118	Silverstone Gardens LLC	Apr-14	8,532	ANR
119	Sintel Inc	Apr-14	12,583	ANR / MichCon
120	Sisters, Servants of Immaculate Heart of Mary	Apr-14	13,007	ANR / CP
121	Sodus Hard Chrome Inc.	Jul-14	8,204	ANR
122	South Haven Hospital	Jul-10	23,998	ANR
123	South Haven Schools	Mar-11	27,161	ANR
124	Spartan Steel Coating	Apr-14	362,743	ANR / CP
125	Speedrack Products Group, Ltd.	Apr-14	63,602	ANR
126	Spring Lake Schools	Apr-14	28,615	ANR / MichCon
127	Spring Meadow Nursery	Sep-14	45,971	ANR / MichCon
128	St Joseph Public Schools	Apr-14	29,626	ANR
129	Sturgis Hospital	Mar-09	26,949	ANR
130	Sturgis Public Schools	Jul-14	24,143	ANR
131	Summit Industrial Coatings Inc.	Aug-14	17,738	ANR
132	Sungro Horticulture	Mar-09	44,621	ANR
133	Supreme Castings	Apr-14	63,246	ANR
134	Tenneco	Feb-12	17,148	ANR
135	Turbo Components	Apr-14	12,180	ANR / MichCon
136	Twixwood Nursery	Dec-09	17,040	ANR
137	Vail Rubber Works	Apr-14	13,523	ANR
138	Van Elderen Inc.	Jun-12	104,051	ANR / CP
139	Whirlpool Corporation	Apr-14	149,286	ANR
140	White Acres L.L.C.	Apr-14	12,947	ANR / MichCon
141	Wolverine Power Supply	May-15	17,707	ANR / CP
142	Wyoming Asphalt Paving	Apr-14	20,943	ANR / CP
	Total Transportation Load		**12,925,340**	

Monthly Load Statistics - Total Company

Load Forecast 2016/2017

LINE	DESCRIPTION (a)	APRIL (b)	MAY (c)	JUNE (d)	JULY (e)	AUGUST (f)	SEPTEMBER (g)	OCTOBER (h)	NOVEMBER (i)	DECEMBER (j)	JANUARY (k)	FEBRUARY (l)	MARCH (m)	Annual Avg. / Total (n)
	Number of Customers													
1	Residential (General & Heating)	137,286	136,928	136,390	136,091	136,192	136,574	137,269	138,214	138,326	138,398	138,498	138,604	137,397
2	Multi-Family	119	119	119	119	119	120	120	120	120	120	120	120	120
3	Commercial (General & Heating)	10,389	10,367	10,344	10,351	10,368	10,399	10,471	10,555	10,571	10,549	10,573	10,601	10,462
4	Industrial (General & Heating)	23	23	23	23	23	23	23	23	23	23	23	23	23
5	Gas Lights	12	12	12	12	12	12	12	12	12	12	12	12	12
6	Total GCR	147,829	147,449	146,889	146,597	146,714	147,128	147,895	148,924	149,051	149,102	149,226	149,360	148,014
7	Transportation	140	140	140	140	140	140	140	140	140	142	142	142	141
8	CHOICE	21,993	21,882	21,771	21,661	21,552	21,443	21,335	21,227	21,120	21,013	20,907	20,801	21,392
9	Total GCR Sales, Transportation & CHOICE	169,962	169,471	168,800	168,398	168,406	168,711	169,370	170,291	170,311	170,257	170,275	170,303	169,546
	Mcf Per Customer													
10	Residential (General & Heating)	7.5	3.8	1.8	1.7	1.6	2.0	4.7	7.6	13.7	15.1	13.4	12.6	85.7
11	Multi-Family	11.5	7.4	5.3	4.5	4.4	5.3	9.8	14.5	21.9	23.8	20.4	18.3	147.1
12	Commercial (General & Heating)	34.3	16.9	6.1	7.9	7.2	10.1	22.0	37.0	65.6	71.4	61.7	55.5	395.8
13	Industrial (General & Heating)	1,068.9	599.7	322.3	245.0	254.8	308.5	456.8	770.3	1,160.0	1,447.4	1,625.1	1,516.9	9,775.7
14	Gas Lights	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	120.0
	Sales Forecast													
15	Residential (General & Heating)	1,036,046	521,991	250,049	233,995	216,174	273,157	642,717	1,055,411	1,899,859	2,095,805	1,855,922	1,745,239	11,826,364
16	Multi-Family	1,372	886	627	541	519	639	1,180	1,737	2,632	2,856	2,443	2,192	17,624
17	Commercial (General & Heating)	356,279	175,610	63,469	81,564	74,398	104,744	230,833	390,781	693,891	752,803	652,845	588,353	4,165,570
18	Industrial (General & Heating)	24,584	13,793	7,412	5,635	5,861	7,095	10,507	17,718	26,679	33,290	37,378	34,889	224,841
19	Gas Lights	120	120	120	120	120	120	120	120	120	120	120	120	1,440
20	Total GCR Sales	1,418,401	712,400	321,677	321,855	297,072	385,755	885,357	1,465,767	2,623,181	2,884,874	2,548,708	2,370,793	16,235,840
21	Transportation	989,763	854,478	749,733	751,007	815,552	768,590	1,004,592	1,115,528	1,221,669	1,588,405	1,615,540	1,450,485	12,925,340
22	CHOICE	210,381	121,079	127,415	50,881	69,026	67,437	194,677	354,310	467,028	563,911	454,885	382,121	3,063,151
23	Total GCR Sales, Transportation & CHOICE	2,618,545	1,687,957	1,198,825	1,123,743	1,181,650	1,221,782	2,084,626	2,935,604	4,311,877	5,037,190	4,619,132	4,203,399	32,224,331
24	Total GCR Sales	1,418,401	712,400	321,677	321,855	297,072	385,755	885,357	1,465,767	2,623,181	2,884,874	2,548,708	2,370,793	16,235,840
25	Company Use	4,200	4,200	4,800	2,200	4,900	100	5,600	6,000	3,600	5,600	5,700	6,700	53,600
26	Gas-in-kind	(5,200)	(4,400)	(4,000)	(4,100)	(4,400)	(4,100)	(5,300)	(6,000)	(6,500)	(8,400)	(8,600)	(7,700)	(68,700)
27	Lost & Unaccounted For	14,000	9,100	6,400	6,000	6,300	6,600	11,200	15,700	23,100	27,000	24,800	22,500	172,700
28	Total GCR Load Requirement	1,431,401	721,300	328,877	325,955	303,872	388,355	896,857	1,481,467	2,643,381	2,909,074	2,570,608	2,392,293	16,393,440
29	Transportation & CHOICE	1,200,144	975,557	877,148	801,888	884,578	836,027	1,199,269	1,469,837	1,688,696	2,152,316	2,070,424	1,832,606	15,988,491
30	Total Throughput	2,631,545	1,696,857	1,206,025	1,127,843	1,188,450	1,224,382	2,096,126	2,951,304	4,332,077	5,061,390	4,641,032	4,224,899	32,381,931
			Co. Use/GIK	(400)			(5,400)			(2,600)			(6,700)	(15,100)
	Computation of Lost & Unaccounted For		L&U	29,500			18,900			50,000			74,300	172,700
	Total System Throughput	2,618,545	1,687,957	1,198,825	1,123,743	1,181,650	1,221,782	2,084,626	2,935,604	4,311,877	5,037,190	4,619,132	4,203,399	32,224,331
	Lost & Unaccounted For	14,047	9,055	6,431	6,028	6,339	6,554	11,183	15,748	23,131	27,022	24,779	22,549	172,866

Monthly Load Statistics - Area 1 - **Benton Harbor**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	252,064	128,222	56,531	54,781	50,755	71,799	145,120	255,389	451,035	578,242	501,353	410,739	2,956,030
2	Transportation	114,591	101,867	95,572	96,105	96,820	93,742	109,339	129,464	136,378	163,651	165,917	156,246	1,459,693
3	CHOICE	47,185	29,467	32,032	13,266	17,253	17,511	45,742	83,460	103,602	137,939	109,137	81,390	717,985
4	Total GCR Sales, Transportation & CHOICE	413,840	259,556	184,135	164,152	164,828	183,052	300,201	468,313	691,015	879,833	776,407	648,375	5,133,707
5	Total GCR Sales	252,064	128,222	56,531	54,781	50,755	71,799	145,120	255,389	451,035	578,242	501,353	410,739	2,956,030
6	Company Use	700	800	800	0	0	0	1,000	400	900	1,400	1,200	1,500	8,700
7	Gas-in-kind	(600)	(500)	(500)	(500)	(500)	(500)	(600)	(700)	(700)	(900)	(900)	(800)	(7,700)
8	Lost & Unaccounted For	1,400	700	300	300	300	400	800	1,400	2,400	3,100	2,700	2,200	16,000
9	Total GCR Load	253,564	129,222	57,131	54,581	50,555	71,699	146,320	256,489	453,635	581,842	504,353	413,639	2,973,030
10	Transportation & CHOICE	161,776	131,334	127,604	109,371	114,073	111,253	155,081	212,924	239,980	301,591	275,054	237,636	2,177,677
11	Total Throughput	415,340	260,556	184,735	163,952	164,628	182,952	301,401	469,413	693,615	883,433	779,407	651,275	5,150,707

MICHIGAN GAS UTILITIES CORPORATION
2016/2017 LOAD FORECAST

Monthly Load Statistics - Area 2 - **Berrien Springs**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	22,868	12,478	5,534	3,293	2,718	3,205	6,718	11,114	24,712	35,624	35,349	33,617	197,230
2	Transportation	27,938	23,779	18,754	18,034	18,448	18,098	24,788	31,364	31,777	42,630	40,013	36,893	332,517
3	CHOICE	4,338	3,204	3,012	704	913	730	1,894	3,390	5,549	7,988	7,658	6,645	46,026
4	Total GCR Sales, Transportation & CHOICE	55,144	39,461	27,300	22,031	22,079	22,033	33,400	45,868	62,038	86,242	83,020	77,155	575,772
5	Total GCR Sales	22,868	12,478	5,534	3,293	2,718	3,205	6,718	11,114	24,712	35,624	35,349	33,617	197,230
6	Company Use	100	100	100	0	0	0	0	0	100	100	200	200	900
7	Gas-in-kind	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(200)	(200)	(200)	(200)	(200)	(1,700)
8	Lost & Unaccounted For	100	100	0	0	0	0	0	100	100	200	200	200	1,000
9	Total GCR Load	22,968	12,578	5,534	3,193	2,618	3,105	6,618	11,014	24,712	35,724	35,549	33,817	197,430
10	Transportation & CHOICE	32,276	26,983	21,766	18,738	19,361	18,828	26,682	34,754	37,326	50,618	47,671	43,538	378,542
11	Total Throughput	55,244	39,561	27,300	21,931	21,979	21,933	33,300	45,768	62,038	86,342	83,220	77,355	575,972

MICHIGAN GAS UTILITIES CORPORATION
2016/2017 LOAD FORECAST

Monthly Load Statistics - Area 3 - **Fennville**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	28,244	13,382	7,803	9,673	9,417	11,380	26,025	39,219	61,300	71,816	54,745	48,679	381,683
2	Transportation	383	1,226	2,780	14,773	10,811	1,946	6,727	7,282	6,841	3,730	3,286	3,580	63,365
3	CHOICE	4,431	2,746	4,326	2,325	3,142	2,734	7,859	11,230	13,213	15,055	11,206	9,347	87,614
4	Total GCR Sales, Transportation & CHOICE	33,058	17,354	14,909	26,771	23,370	16,060	40,611	57,731	81,354	90,601	69,237	61,606	532,662
5	Total GCR Sales	28,244	13,382	7,803	9,673	9,417	11,380	26,025	39,219	61,300	71,816	54,745	48,679	381,683
6	Company Use	100	0	0	0	0	0	0	0	200	300	100	200	900
7	Gas-in-kind	0	0	0	(100)	(100)	0	0	0	0	0	0	0	(200)
8	Lost & Unaccounted For	200	100	0	100	100	100	100	200	300	400	300	300	2,200
9	Total GCR Load	28,544	13,482	7,803	9,673	9,417	11,480	26,125	39,419	61,800	72,516	55,145	49,179	384,583
10	Transportation & CHOICE	4,814	3,972	7,106	17,098	13,953	4,680	14,586	18,512	20,054	18,785	14,492	12,927	150,979
11	Total Throughput	33,358	17,454	14,909	26,771	23,370	16,160	40,711	57,931	81,854	91,301	69,637	62,106	535,562

Monthly Load Statistics - Area 4 - **South Haven**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	43,484	24,603	12,619	14,207	13,261	16,078	29,422	43,295	86,630	96,187	78,909	77,508	536,203
2	Transportation	9,693	6,505	4,427	3,902	3,770	3,451	6,597	11,232	13,760	16,840	17,326	15,941	113,443
3	CHOICE	7,869	5,381	5,327	2,003	2,693	2,345	6,142	10,672	17,160	21,491	16,643	14,716	112,442
4	Total GCR Sales, Transportation & CHOICE	61,046	36,489	22,373	20,112	19,724	21,874	42,161	65,199	117,550	134,518	112,878	108,165	762,088
5	Total GCR Sales	43,484	24,603	12,619	14,207	13,261	16,078	29,422	43,295	86,630	96,187	78,909	77,508	536,203
6	Company Use	200	100	0	0	0	0	0	0	200	300	300	300	1,400
7	Gas-in-kind	(100)	0	0	0	0	0	0	(100)	(100)	(100)	(100)	(100)	(600)
8	Lost & Unaccounted For	200	100	100	100	100	100	200	200	500	500	400	400	2,900
9	Total GCR Load	43,784	24,803	12,719	14,307	13,361	16,178	29,622	43,395	87,230	96,887	79,509	78,108	539,903
10	Transportation & CHOICE	17,562	11,886	9,754	5,905	6,463	5,796	12,739	21,904	30,920	38,331	33,969	30,657	225,885
11	Total Throughput	61,346	36,689	22,473	20,212	19,824	21,974	42,361	65,299	118,150	135,218	113,478	108,765	765,788

Monthly Load Statistics - Benton Harbor District Total

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	346,660	178,685	82,487	81,954	76,151	102,462	207,285	349,017	623,677	781,869	670,356	570,543	4,071,146
2	Transportation	152,605	133,377	121,533	132,814	129,849	117,237	147,451	179,342	188,756	226,851	226,542	212,660	1,969,017
3	CHOICE	63,824	40,798	44,697	18,297	24,001	23,320	61,637	108,752	139,524	182,473	144,643	112,099	964,066
4	Total GCR Sales, Transportation & CHOICE	563,089	352,860	248,717	233,065	230,001	243,019	416,373	637,111	951,956	1,191,194	1,041,541	895,301	7,004,230
5	Total GCR Sales	346,660	178,685	82,487	81,954	76,151	102,462	207,285	349,017	623,677	781,869	670,356	570,543	4,071,146
6	Company Use	1,100	1,000	900	0	0	0	1,000	400	1,400	2,100	1,800	2,200	11,900
7	Gas-in-kind	(800)	(600)	(600)	(700)	(700)	(600)	(700)	(1,000)	(1,000)	(1,200)	(1,200)	(1,100)	(10,200)
8	Lost & Unaccounted For	1,900	1,000	400	500	500	600	1,100	1,900	3,300	4,200	3,600	3,100	22,100
9	Total GCR Load	348,860	180,085	83,187	81,754	75,951	102,462	208,685	350,317	627,377	786,969	674,556	574,743	4,094,946
10	Transportation & CHOICE	216,429	174,175	166,230	151,111	153,850	140,557	209,088	288,094	328,279	409,325	371,185	324,758	2,933,084
11	Total Throughput	565,289	354,260	249,417	232,865	229,801	243,019	417,773	638,411	955,656	1,196,294	1,045,741	899,501	7,028,030

Monthly Load Statistics - Area 5 - **Grand Haven**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	213,719	115,249	58,140	59,075	54,307	66,595	146,945	198,607	399,086	407,353	348,702	339,174	2,406,952
2	Transportation	127,495	100,565	97,330	90,206	89,442	87,603	113,114	140,320	150,643	171,595	174,523	163,331	1,506,167
3	CHOICE	27,533	15,610	18,838	7,406	10,482	9,294	24,359	34,464	48,666	65,008	51,918	45,791	359,369
4	Total GCR Sales, Transportation & CHOICE	368,747	231,424	174,308	156,687	154,231	163,492	284,419	373,391	598,395	643,955	575,143	548,296	4,272,488
5	Total GCR Sales	213,719	115,249	58,140	59,075	54,307	66,595	146,945	198,607	399,086	407,353	348,702	339,174	2,406,952
6	Company Use	400	200	100	0	0	0	100	200	400	600	600	800	3,400
7	Gas-in-kind	(700)	(500)	(500)	(500)	(500)	(500)	(600)	(800)	(800)	(900)	(900)	(900)	(8,100)
8	Lost & Unaccounted For	1,100	600	300	300	300	400	800	1,100	2,100	2,200	1,900	1,800	12,900
9	Total GCR Load	214,519	115,549	58,040	58,875	54,107	66,495	147,245	199,107	400,786	409,253	350,302	340,874	2,415,152
10	Transportation & CHOICE	155,028	116,175	116,168	97,612	99,924	96,897	137,474	174,784	199,309	236,602	226,441	209,122	1,865,536
11	Total Throughput	369,547	231,724	174,208	156,487	154,031	163,392	284,719	373,891	600,095	645,855	576,743	549,996	4,280,688

MICHIGAN GAS UTILITIES CORPORATION
2016/2017 LOAD FORECAST

Monthly Load Statistics - Area 6 - **Coopersville**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	19,203	7,938	3,867	3,838	3,193	3,262	8,590	22,814	32,749	37,588	34,028	29,372	206,442
2	Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0
3	CHOICE	1,436	761	728	288	372	325	699	2,681	2,834	3,101	3,325	2,413	18,963
4	Total GCR Sales, Transportation & CHOICE	20,639	8,699	4,595	4,126	3,565	3,587	9,289	25,495	35,583	40,689	37,353	31,785	225,405
5	Total GCR Sales	19,203	7,938	3,867	3,838	3,193	3,262	8,590	22,814	32,749	37,588	34,028	29,372	206,442
6	Company Use	100	100	0	0	0	100	100	100	200	200	200	200	1,300
7	Gas-in-kind	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Lost & Unaccounted For	100	0	0	0	0	0	0	100	200	200	200	200	1,000
9	Total GCR Load	19,403	8,038	3,867	3,838	3,193	3,362	8,690	23,014	33,149	37,988	34,428	29,772	208,742
10	Transportation & CHOICE	1,436	761	728	288	372	325	699	2,681	2,834	3,101	3,325	2,413	18,963
11	Total Throughput	20,839	8,799	4,595	4,126	3,565	3,687	9,389	25,695	35,983	41,089	37,753	32,185	227,705

Monthly Load Statistics - Grand Haven District Total

LINE	DESCRIPTION (a)	APRIL (b)	MAY (c)	JUNE (d)	JULY (e)	AUGUST (f)	SEPTEMBER (g)	OCTOBER (h)	NOVEMBER (i)	DECEMBER (j)	JANUARY (k)	FEBRUARY (l)	MARCH (m)	12 MOS. TOTAL (n)
	Sales Forecast													
1	Total GCR Sales	232,922	123,187	62,007	62,913	57,500	69,857	155,535	221,421	431,835	444,941	382,730	368,546	2,613,394
2	Transportation	127,495	100,565	97,330	90,206	89,442	87,603	113,114	140,320	150,643	171,595	174,523	163,331	1,506,167
3	CHOICE	28,968	16,371	19,567	7,694	10,853	9,619	25,059	37,145	51,500	68,109	55,243	48,204	378,332
4	Total GCR Sales, Transportation & CHOICE	389,385	240,123	178,904	160,813	157,795	167,079	293,708	398,886	633,978	684,645	612,496	580,081	4,497,893
5	Total GCR Sales	232,922	123,187	62,007	62,913	57,500	69,857	155,535	221,421	431,835	444,941	382,730	368,546	2,613,394
6	Company Use	500	300	100	0	0	100	200	300	600	800	800	1,000	4,700
7	Gas-in-kind	(700)	(500)	(500)	(500)	(500)	(500)	(600)	(800)	(800)	(900)	(900)	(900)	(8,100)
8	Lost & Unaccounted For	1,200	600	300	300	300	400	800	1,200	2,300	2,400	2,100	2,000	13,900
9	Total GCR Load	233,922	123,587	61,907	62,713	57,300	69,857	155,935	222,121	433,935	447,241	384,730	370,646	2,623,894
10	Transportation & CHOICE	156,463	116,936	116,897	97,900	100,295	97,222	138,173	177,465	202,143	239,704	229,766	211,535	1,884,499
11	Total Throughput	390,385	240,523	178,804	160,613	157,595	167,079	294,108	399,586	636,078	686,945	614,496	582,181	4,508,393

Monthly Load Statistics - Area 7 - **Otsego North**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	43,748	20,264	9,853	11,751	10,959	15,282	41,782	74,643	102,991	107,165	96,300	76,216	610,954
2	Transportation	15,515	11,407	11,901	10,429	10,068	13,414	16,344	20,598	20,184	21,650	24,822	21,708	198,040
3	CHOICE	8,024	4,807	5,891	3,455	3,792	4,410	14,633	31,315	31,416	25,830	22,693	17,470	173,735
4	Total GCR Sales, Transportation & CHOICE	67,287	36,478	27,645	25,635	24,819	33,106	72,759	126,556	154,591	154,645	143,815	115,394	982,729
5	Total GCR Sales	43,748	20,264	9,853	11,751	10,959	15,282	41,782	74,643	102,991	107,165	96,300	76,216	610,954
6	Company Use	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Gas-in-kind	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(1,200)
8	Lost & Unaccounted For	200	100	100	100	100	100	200	400	600	600	500	400	3,400
9	Total GCR Load	43,848	20,264	9,853	11,751	10,959	15,282	41,882	74,943	103,491	107,665	96,700	76,516	613,154
10	Transportation & CHOICE	23,539	16,214	17,792	13,884	13,860	17,824	30,977	51,913	51,600	47,480	47,515	39,178	371,775
11	Total Throughput	67,387	36,478	27,645	25,635	24,819	33,106	72,859	126,856	155,091	155,145	144,215	115,694	984,929

Monthly Load Statistics - Area 8 - **Otsego South**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	90,811	48,670	21,532	19,718	18,176	22,953	51,052	87,336	175,630	184,106	160,199	148,222	1,028,405
2	Transportation	195,363	192,180	145,714	166,144	180,883	163,568	207,274	203,419	207,607	266,743	238,315	201,383	2,368,593
3	CHOICE	19,866	12,459	12,643	4,284	5,623	5,489	17,033	31,492	45,966	49,104	39,835	33,096	276,889
4	Total GCR Sales, Transportation & CHOICE	306,040	253,309	179,889	190,146	204,682	192,010	275,359	322,247	429,203	499,953	438,349	382,702	3,673,887
5	Total GCR Sales	90,811	48,670	21,532	19,718	18,176	22,953	51,052	87,336	175,630	184,106	160,199	148,222	1,028,405
6	Company Use	100	0	0	0	0	0	0	0	100	100	100	100	500
7	Gas-in-kind	(1,000)	(1,000)	(800)	(900)	(1,000)	(900)	(1,100)	(1,100)	(1,100)	(1,400)	(1,300)	(1,100)	(12,700)
8	Lost & Unaccounted For	500	300	100	100	100	100	300	500	900	1,000	900	800	5,600
9	Total GCR Load	90,411	47,970	20,832	18,918	17,276	22,153	50,252	86,736	175,530	183,806	159,899	148,022	1,021,805
10	Transportation & CHOICE	215,229	204,639	158,357	170,428	186,506	169,057	224,307	234,911	253,573	315,847	278,150	234,480	2,645,482
11	Total Throughput	305,640	252,609	179,189	189,346	203,782	191,210	274,559	321,647	429,103	499,653	438,049	382,502	3,667,287

Monthly Load Statistics - Otsego District Total

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	134,559	68,934	31,385	31,469	29,135	38,235	92,834	161,979	278,621	291,271	256,499	224,438	1,639,359
2	Transportation	210,878	203,587	157,615	176,573	190,951	176,982	223,618	224,017	227,791	288,393	263,137	223,091	2,566,633
3	CHOICE	27,890	17,266	18,533	7,740	9,414	9,899	31,666	62,806	77,382	74,934	62,528	50,566	450,624
4	Total GCR Sales, Transportation & CHOICE	373,327	289,787	207,533	215,782	229,500	225,116	348,118	448,802	583,794	654,598	582,164	498,095	4,205,992
5	Total GCR Sales	134,559	68,934	31,385	31,469	29,135	38,235	92,834	161,979	278,621	291,271	256,499	224,438	1,639,359
6	Company Use	100	0	0	0	0	0	0	0	100	100	100	100	500
7	Gas-in-kind	(1,100)	(1,100)	(900)	(1,000)	(1,100)	(1,000)	(1,200)	(1,200)	(1,200)	(1,500)	(1,400)	(1,200)	(13,900)
8	Lost & Unaccounted For	700	400	200	200	200	200	500	900	1,500	1,600	1,400	1,200	9,000
9	Total GCR Load	134,259	68,234	30,685	30,669	28,235	37,435	92,134	161,679	279,021	291,471	256,599	224,538	1,634,959
10	Transportation & CHOICE	238,768	220,853	176,148	184,313	200,365	186,881	255,284	286,823	305,173	363,327	325,665	273,657	3,017,257
11	Total Throughput	373,027	289,087	206,833	214,982	228,600	224,316	347,418	448,502	584,194	654,798	582,264	498,195	4,652,216

Monthly Load Statistics - Area 9 - **Coldwater**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	232,739	108,932	48,270	45,988	42,175	58,725	155,758	245,534	448,151	454,269	390,355	385,344	2,616,240
2	Transportation	283,536	224,699	209,271	184,142	207,821	209,971	276,392	302,264	321,969	570,423	573,042	537,649	3,901,180
3	CHOICE	48,546	25,044	24,201	8,837	13,224	13,088	42,996	72,819	108,802	137,983	110,266	97,276	703,082
4	Total GCR Sales, Transportation & CHOICE	564,821	358,675	281,742	238,967	263,220	281,784	475,146	620,617	878,922	1,162,675	1,073,664	1,020,269	7,220,502
5	Total GCR Sales	232,739	108,932	48,270	45,988	42,175	58,725	155,758	245,534	448,151	454,269	390,355	385,344	2,616,240
6	Company Use	1,900	2,700	3,700	2,200	4,900	0	4,400	5,100	900	1,700	1,900	2,300	31,700
7	Gas-in-kind	(1,500)	(1,200)	(1,100)	(1,000)	(1,100)	(1,100)	(1,500)	(1,600)	(1,700)	(3,100)	(3,100)	(2,900)	(20,900)
8	Lost & Unaccounted For	1,200	600	300	200	200	300	800	1,300	2,400	2,400	2,100	2,100	13,900
9	Total GCR Load	234,339	111,032	51,170	47,388	46,175	57,925	159,458	250,334	449,751	455,269	391,255	386,844	2,640,940
10	Transportation & CHOICE	332,082	249,743	233,472	192,979	221,045	223,059	319,388	375,083	430,771	708,406	683,309	634,925	4,604,262
11	Total Throughput	566,421	360,775	284,642	240,367	267,220	280,984	478,846	625,417	880,522	1,163,675	1,074,564	1,021,769	7,245,202

Monthly Load Statistics - Area 10 - **Coldwater Lake**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	4,694	2,058	792	1,636	1,201	1,998	5,097	8,708	12,419	13,580	10,074	12,053	74,310
2	Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0
3	CHOICE	290	132	138	63	81	130	408	975	908	1,178	898	734	5,934
4	Total GCR Sales, Transportation & CHOICE	4,984	2,190	930	1,699	1,282	2,128	5,505	9,683	13,327	14,758	10,972	12,787	80,244
5	Total GCR Sales	4,694	2,058	792	1,636	1,201	1,998	5,097	8,708	12,419	13,580	10,074	12,053	74,310
6	Company Use	0	0	0	0	0	0	0	0	0	100	100	0	200
7	Gas-in-kind	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Lost & Unaccounted For	0	0	0	0	0	0	0	0	100	100	100	100	400
9	Total GCR Load	4,694	2,058	792	1,636	1,201	1,998	5,097	8,708	12,519	13,780	10,274	12,153	74,910
10	Transportation & CHOICE	290	132	138	63	81	130	408	975	908	1,178	898	734	5,934
11	Total Throughput	4,984	2,190	930	1,699	1,282	2,128	5,505	9,683	13,427	14,958	11,172	12,887	80,844

Monthly Load Statistics - Area 11 - **Morenci City**

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	8,031	3,577	1,280	1,380	1,510	1,817	13,302	8,699	30,448	20,253	14,996	13,835	119,128
2	Transportation	4,975	3,722	2,591	2,542	3,674	3,533	4,846	6,245	5,650	7,539	7,674	6,775	59,767
3	CHOICE	1,532	812	631	247	393	521	2,528	1,771	6,266	5,637	3,771	3,160	27,269
4	Total GCR Sales, Transportation & CHOICE	14,538	8,111	4,502	4,169	5,577	5,871	20,676	16,715	42,364	33,430	26,441	23,770	206,164
5	Total GCR Sales	8,031	3,577	1,280	1,380	1,510	1,817	13,302	8,699	30,448	20,253	14,996	13,835	119,128
6	Company Use	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Gas-in-kind	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Lost & Unaccounted For	0	0	0	0	0	0	100	0	200	100	100	100	600
9	Total GCR Load	8,031	3,577	1,280	1,380	1,510	1,817	13,402	8,699	30,648	20,353	15,096	13,935	119,728
10	Transportation & CHOICE	6,507	4,534	3,222	2,789	4,067	4,054	7,374	8,016	11,916	13,177	11,445	9,935	87,036
11	Total Throughput	14,538	8,111	4,502	4,169	5,577	5,871	20,776	16,715	42,564	33,530	26,541	23,870	206,764

Monthly Load Statistics - Coldwater District Total

Load Forecast 2016/2017

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	245,464	114,567	50,342	49,004	44,886	62,540	174,157	262,941	491,018	488,102	415,425	411,232	2,809,678
2	Transportation	288,511	228,421	211,862	186,684	211,495	213,504	281,238	308,509	327,619	577,962	580,717	544,425	3,960,947
3	CHOICE	50,368	25,988	24,970	9,148	13,697	13,739	45,932	75,565	115,975	144,798	114,935	101,169	736,285
4	Total GCR Sales, Transportation & CHOICE	584,343	368,976	287,174	244,836	270,078	289,783	501,327	647,016	934,612	1,210,862	1,111,077	1,056,826	7,506,910
5	Total GCR Sales	245,464	114,567	50,342	49,004	44,886	62,540	174,157	262,941	491,018	488,102	415,425	411,232	2,809,678
6	Company Use	1,900	2,700	3,700	2,200	4,900	0	4,400	5,100	900	1,800	2,000	2,300	31,900
7	Gas-in-kind	(1,500)	(1,200)	(1,100)	(1,000)	(1,100)	(1,100)	(1,500)	(1,600)	(1,700)	(3,100)	(3,100)	(2,900)	(20,900)
8	Lost & Unaccounted For	1,200	600	300	200	200	300	900	1,300	2,700	2,600	2,300	2,300	14,900
9	Total GCR Load	247,064	116,667	53,242	50,404	48,886	61,740	177,957	267,741	492,918	489,402	416,625	412,932	2,835,578
10	Transportation & CHOICE	338,879	254,409	236,832	195,832	225,192	227,243	327,170	384,075	443,594	722,760	695,652	645,594	4,697,232
11	Total Throughput	585,943	371,076	290,074	246,236	274,078	288,983	505,127	651,816	936,512	1,212,162	1,112,277	1,058,526	7,532,810

Monthly Load Statistics - Area 12 - Monroe (District Total)

Load Forecast 2016/2017

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	458,796	227,027	95,456	96,515	89,400	112,661	255,546	470,409	798,030	878,691	823,698	796,034	5,102,263
2	Transportation	210,274	188,528	161,393	164,730	193,815	173,264	239,170	263,339	326,860	323,603	370,621	306,979	2,922,576
3	CHOICE	39,331	20,655	19,647	8,003	11,060	10,861	30,384	70,042	82,647	93,596	77,535	70,083	533,844
4	Total GCR Sales, Transportation & CHOICE	708,401	436,210	276,496	269,248	294,275	296,786	525,100	803,790	1,207,537	1,295,891	1,271,854	1,173,095	8,558,683
5	Total GCR Sales	458,796	227,027	95,456	96,515	89,400	112,661	255,546	470,409	798,030	878,691	823,698	796,034	5,102,263
6	Company Use	600	200	100	0	0	0	0	200	600	800	1,000	1,100	4,600
7	Gas-in-kind	(1,100)	(1,000)	(900)	(900)	(1,000)	(900)	(1,300)	(1,400)	(1,800)	(1,700)	(2,000)	(1,600)	(15,600)
8	Lost & Unaccounted For	9,000	6,500	5,200	4,800	5,100	5,100	7,900	10,400	13,300	16,200	15,400	13,900	112,800
9	Total GCR Load	467,296	232,727	99,856	100,415	93,500	116,861	262,146	479,609	810,130	893,991	838,098	809,434	5,204,063
10	Transportation & CHOICE	249,605	209,183	181,040	172,733	204,875	184,125	269,554	333,381	409,507	417,200	448,156	377,061	3,456,420
11	Total Throughput	716,901	441,910	280,896	273,148	298,375	300,986	531,700	812,990	1,219,637	1,311,191	1,286,254	1,186,495	8,660,483

Monthly Load Statistics - Western Division Total

Load Forecast 2016/2017

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	714,141	370,806	175,879	176,336	162,786	210,554	455,654	732,417	1,334,133	1,518,081	1,309,585	1,163,527	8,323,899
2	Transportation	490,978	437,529	376,478	399,593	410,242	381,822	484,183	543,679	567,190	686,839	664,202	599,081	6,041,817
3	CHOICE	120,682	74,435	82,797	33,731	44,269	42,838	118,361	208,703	268,406	325,517	262,414	210,869	1,793,022
4	Total GCR Sales, Transportation & CHOICE	1,325,801	882,770	635,154	609,660	617,297	635,214	1,058,199	1,484,799	2,169,729	2,530,437	2,236,201	1,973,478	16,158,738
5	Total GCR Sales	714,141	370,806	175,879	176,336	162,786	210,554	455,654	732,417	1,334,133	1,518,081	1,309,585	1,163,527	8,323,899
6	Company Use	1,700	1,300	1,000	0	0	100	1,200	700	2,100	3,000	2,700	3,300	17,100
7	Gas-in-kind	(2,600)	(2,200)	(2,000)	(2,200)	(2,300)	(2,100)	(2,500)	(3,000)	(3,000)	(3,600)	(3,500)	(3,200)	(32,200)
8	Lost & Unaccounted For	3,800	2,000	900	1,000	1,000	1,200	2,400	4,000	7,100	8,200	7,100	6,300	45,000
9	Total GCR Load	717,041	371,906	175,779	175,136	161,486	209,754	456,754	734,117	1,340,333	1,525,681	1,315,885	1,169,927	8,353,799
10	Transportation & CHOICE	611,660	511,964	459,275	433,324	454,511	424,660	602,545	752,382	835,596	1,012,356	926,616	809,951	7,834,839
11	Total Throughput	1,328,701	883,870	635,054	608,460	615,997	634,414	1,059,299	1,486,499	2,175,929	2,538,037	2,242,501	1,979,878	16,188,638

Monthly Load Statistics - Southern Division Total

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	12 MOS. TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Sales Forecast													
1	Total GCR Sales	704,260	341,594	145,798	145,519	134,286	175,201	429,703	733,350	1,289,048	1,366,793	1,239,123	1,207,266	7,911,941
2	Transportation	498,785	416,949	373,255	351,414	405,310	386,768	520,408	571,848	654,479	901,565	951,338	851,403	6,883,523
3	CHOICE	89,699	46,644	44,618	17,151	24,757	24,599	76,316	145,607	198,622	238,394	192,470	171,252	1,270,129
4	Total GCR Sales, Transportation & CHOICE	1,292,744	805,187	563,671	514,084	564,353	586,568	1,026,427	1,450,805	2,142,149	2,506,753	2,382,932	2,229,921	16,065,593
5	Total GCR Sales	704,260	341,594	145,798	145,519	134,286	175,201	429,703	733,350	1,289,048	1,366,793	1,239,123	1,207,266	7,911,941
6	Company Use	2,500	2,900	3,800	2,200	4,900	0	4,400	5,300	1,500	2,600	3,000	3,400	36,500
7	Gas-in-kind	(2,600)	(2,200)	(2,000)	(1,900)	(2,100)	(2,000)	(2,800)	(3,000)	(3,500)	(4,800)	(5,100)	(4,500)	(36,500)
8	Lost & Unaccounted For	10,200	7,100	5,500	5,000	5,300	5,400	8,800	11,700	16,000	18,800	17,700	16,200	127,700
9	Total GCR Load	714,360	349,394	153,098	150,819	142,386	178,601	440,103	747,350	1,303,048	1,383,393	1,254,723	1,222,366	8,039,641
10	Transportation & CHOICE	588,484	463,593	417,873	368,565	430,067	411,367	596,724	717,455	853,101	1,139,960	1,143,809	1,022,655	8,153,652
11	Total Throughput	1,302,844	812,987	570,971	519,384	572,453	589,968	1,036,827	1,464,805	2,156,149	2,523,353	2,398,532	2,245,021	16,193,293

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION

Forecasted Monthly Load Statistics
2016/2017 LOAD FORECAST
Total Company

LINE	DESCRIPTION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	2016/2017 LOAD FORECAST TOTAL
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
	Customers Per Revenue Class													
1	Residential	137,286	136,928	136,390	136,091	136,192	136,574	137,269	138,214	138,326	138,398	138,498	138,604	137,397
2	Multi-Family	119	119	119	119	119	120	120	120	120	120	120	120	120
3	General Service	10,424	10,402	10,379	10,386	10,403	10,434	10,506	10,590	10,606	10,584	10,608	10,636	10,497
4	Total GCR Customers	147,829	147,449	146,889	146,597	146,714	147,128	147,895	148,924	149,051	149,102	149,226	149,360	148,014
	Mcf Per Customer													
5	Residential	7.5	3.8	1.8	1.7	1.6	2.0	4.7	7.6	13.7	15.1	13.4	12.6	85.7
6	Multi-Family	11.5	7.4	5.3	4.5	4.4	5.3	9.8	14.5	21.9	23.8	20.4	18.3	147.1
7	General Service	36.5	18.2	6.8	8.4	7.7	10.7	23.0	38.6	68.0	74.3	65.1	58.6	416.0
	Sales Forecast													
8	Residential	1,036,046	521,991	250,049	233,995	216,174	273,157	642,717	1,055,411	1,899,859	2,095,805	1,855,922	1,745,239	11,826,364
9	Multi-Family	1,372	886	627	541	519	639	1,180	1,737	2,632	2,856	2,443	2,192	17,624
10	General Service	380,983	189,523	71,001	87,319	80,379	111,959	241,460	408,619	720,690	786,213	690,343	623,362	4,391,851
11	Total GCR Customers	1,418,401	712,400	321,677	321,855	297,072	385,755	885,357	1,465,767	2,623,181	2,884,874	2,548,708	2,370,793	16,235,840
12	Company-Use, Gas-in-Kind, Lost & Unact'd-For	13,000	8,900	7,200	4,100	6,800	2,600	11,500	15,700	20,200	24,200	21,900	21,500	157,600
13	Total GCR Requirement	1,431,401	721,300	328,877	325,955	303,872	388,355	896,857	1,481,467	2,643,381	2,909,074	2,570,608	2,392,293	16,393,440

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION

Case No. : U -17940
Exhibit: A-16 (DJT-3)
Witness: David J. Tyler

CALCULATION OF THE GCR OVER/UNDER PROJECTION FOR 2015/2016
UTILIZING ACTUALS AND NYMEX PROJECTED GAS COSTS

Line #	Month	Actual/Projected GCR Sales Volumes (a)	Actual/Projected Commodity Cost Factor Billed ($/Mcf) (b)	Projected Commodity Cost ($/Mcf) (c)	Actual / Projected Cost ($/Mcf) (i) / (a) (d)	Cost Difference ($/Mcf) (b)-(d) (e)	Actual/Projected Current Month Unbilled Sales GCR Volumes (f)	Change In GCR Rate Billed (g)	Total Cost Difference [(a)*(e)]+[(f)*(g)] (h)	Current Balance
Over/(Under) Recovery Carry-Over As of March 31, 2014									**$ 3,140,341**	
1	April - 15	1,090,666	$ 3.0005		$ 2.3059	$ 0.6946	456,642	$ -	757,534	
2	May	522,837	3.0005		2.8487	0.1518	17,151	-	79,369	
3	June	691,820	3.0005		0.7944	2.2061	212,390	-	1,526,198	
4	July	217,303	3.0005		5.6600	(2.6595)	83,274	-	(577,924)	
5	August	421,215	3.0005		2.4596	0.5409	207,772	(0.3005)	165,419	
6	September	318,650	2.7000		4.1629	(1.4629)	218,779	-	(466,156)	
7	October	785,100	2.7000		2.9622	(0.2622)	605,408	(0.2000)	(326,945)	
8	November	1,356,041	2.5000		4.3119	(1.8119)	1,264,572	-	(2,457,002)	*$ 1,840,835*
9	December	2,624,446	2.5000	$ 2.5039	2.5039	(0.0039)	1,862,600	(0.3000)	(569,018)	
10	January - 16	2,949,669	2.2000	2.4934	2.4934	(0.2934)	2,090,200	-	(865,460)	
11	February	2,637,387	2.2000	2.5163	2.5163	(0.3163)	1,875,500	-	(834,218)	
12	March	2,446,291	2.2000	2.5079	2.5079	(0.3079)	1,383,700	0.4946	(68,911)	
		16,061,425	2.6946						(3,637,112)	
13	**Projected 2015/2016 OVER/(UNDER)-RECOVERY**								**$ (496,771)**	

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION

Case No. U -17940
Exhibit: A-16 (DJT-3)
Witness: David J. Tyler
Page 2 of 2

CALCULATION OF THE *RESERVATION CHARGE* OVER/UNDER PROJECTION FOR 2015/2016
UTILIZING ACTUALS AND NYMEX PROJECTED GAS COSTS

Line #	Month	Actual/Projected GCR Sales Volumes (a)	Actual/Projected GCC Sales Volumes (b)	Actual/Projected Reservation Charge Billed ($/Mcf) (c)	Projected Reservation Charges ($/Mcf) (d)	Actual / Projected Cost ($/Mcf) (k) / [(a)+(b)] (e)	Cost Difference ($/Mcf) (c)-(e) (f)	Actual/Projected Current Month Unbilled Sales GCR Volumes (g)	Actual/Projected Current Month Unbilled Sales GCC Volumes (h)	Change In Reservation Charge Billed (i)	Total Cost Difference [{(a)+(b)}*(f)]+ [{(g)+(h)}*(i)] (j)	Current Balance
Over/(Under) Recovery Carry-Over As of March 31, 2014											**$ 2,735,912**	
1	April - 15	1,090,666	230,105	$ 0.5268		$ 1.0941	$ (0.5673)	456,642	96,178	$ -	(749,258)	
2	May	522,837	111,596	0.5268		1.2586	$ (0.7318)	17,151	3,638	-	(464,298)	
3	June	691,820	170,605	0.5268		0.7437	$ (0.2169)	212,390	65,783	-	(187,036)	
4	July	217,303	31,756	0.5268		2.5758	$ (2.0490)	83,274	18,902	-	(510,331)	
5	August	421,215	98,300	0.5268		1.3248	$ (0.7980)	207,772	48,268	-	(414,589)	
6	September	318,650	66,336	0.5268		1.7889	$ (1.2621)	218,779	47,630	-	(485,883)	
7	October	785,100	191,438	0.5268		0.6499	$ (0.1231)	605,408	144,174	-	(120,205)	
8	November	1,356,041	298,255	0.5268		0.2629	$ 0.2639	1,264,572	285,240	-	436,487	$ *240,799*
9	December	2,624,446	438,150	0.5268	$ 0.4778	0.4778	$ 0.0490	1,862,600	347,000	-	150,148	
10	January - 16	2,949,669	485,951	0.5268	0.4259	0.4259	$ 0.1009	2,090,200	347,100	-	346,657	
11	February	2,637,387	427,343	0.5268	0.4774	0.4774	$ 0.0494	1,875,500	316,700	-	151,272	
12	March	2,446,291	388,825	0.5268	0.5100	0.5100	$ 0.0168	1,383,700	222,600	0.1036	214,051	
		16,061,425	2,938,660	0.6304							(1,632,986)	
13	**Projected 2015/2016 OVER/(UNDER)-RECOVERY**										**$ 1,102,928**	

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION

Case No.: U-17940
Exhibit: A-17 (DJT-4) Page 1 of 4
Witness: David J. Tyler

Billed Volumes in MMcf @ 14.65 psia dry
For the GCR Plan Period Ending March 31, 2017

Line	Month	Total GCR Load Requirement	Company Use	Gas in Kind	Lost and Unaccounted For	Calendar Month Sales	Current Month Unbilled	Prior Month Unbilled	Billed GCR Volumes
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	April 2015	1,431.4	4.2	5.2	14.0	1,418.4	593.8	1,383.7	2,208.3
2	May	721.3	4.2	4.4	9.1	712.4	23.4	593.8	1,282.8
3	June	328.9	4.8	4.0	6.4	321.7	98.8	23.4	246.3
4	July	325.9	2.2	4.1	6.0	321.8	123.4	98.8	297.2
5	August	303.9	4.9	4.4	6.3	297.1	146.5	123.4	274.0
6	September	388.3	0.1	4.1	6.6	385.7	234.3	146.5	297.9
7	October	896.8	5.6	5.3	11.2	885.3	613.1	234.3	506.5
8	November	1,481.5	6.0	6.0	15.7	1,465.8	1,155.5	613.1	923.4
9	December	2,643.4	3.6	6.5	23.1	2,623.2	1,795.2	1,155.5	1,983.5
10	January 2016	2,909.1	5.6	8.4	27.0	2,884.9	1,807.1	1,795.2	2,873.0
11	February	2,570.6	5.7	8.6	24.8	2,548.7	1,783.7	1,807.1	2,572.1
12	March	2,392.3	6.7	7.7	22.5	2,370.8	1,373.6	1,783.7	2,780.9
13	TOTAL	16,393.4	53.6	68.7	172.7	16,235.8	9,748.4	9,758.5	16,245.9
		(1)	**(2)**	**(2)**	**(2)**		**(3)**	**(3)**	

Sources: **(1)** Exhibit A-15, page 2 of 11, Line #16
(2) Workpaper A-15-1, page 1 of 20, Lines # 25, 26 & 27, respectively
(3) Workpaper A-17-1, Lines # 13 and 12, respectively

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION

Case No.: U-17940
Exhibit: A-17 (DJT-4) Page 2 of 4
Witness: David J. Tyler

Derivation of the Base Gas Cost Recovery
Factor for the GCR Plan Period
Ending March 31, 2017

Line	Description (a)		Annual Cost (b)	
	Cost of Gas Sold			
1	Total Supplier Commodity Costs **(1)**		$ 42,668,163	
2	Pipeline Demand/Supply Reservation Costs **(2)**		13,267,943	
3	Total Net Cost of Storage (Injections) / Withdrawals **(3)**		639,551	
4	Hedging Costs **(4)**		497,970	
	Less:			
5	Company Use Gas **(5)**		188,420	
6	Lost and Unaccounted For **(5)**		607,091	
	Plus:			
7	Gas-In-kind **(5)**		241,501	
8	Total Cost of Gas Sold		56,519,617	
9	2015/2016 Projected Rsrv. Chrg. Over-Recovery **(6)**		(1,102,928)	
10	2015/2016 Projected GCR Under-Recovery **(7)**		496,771	
11	**Total Projected 2016/2017 Costs**		**$ 55,913,460**	
	Derivation of Charges			
12	Demand/Supply Reservation Costs	(from line 2)	$ 13,267,943	
13	2015/2016 Projected Rsrv. Chrg. Over-Recovery (6)	(from line 9)	(1,102,928)	
14	Total Sales and GCC Volumes - Mcf **(8)**		19,298,991	
15	**Proposed Reservation Charge - Per Mcf**	(line (12+13)/14)	**$ 0.6303**	
16	Reservation Revenues	(line 14 X 15)	12,164,154	
17	Total Cost of Gas Sold	(from line 11)	$ 55,913,460	
18	Less: Reservation Revenues	(from line 16)	(12,164,154)	
19	Commodity Cost of Gas Sold		43,749,305	
20	Total Calendar Month Sales **(9)**		16,235,800	
21	**Proposed Gas Commodity Cost - Per Mcf**	(line19 / 20)	**$ 2.6946**	
22	Gas Commodity Cost Revenues	(line 20 X 21)	43,749,094	
23	Total Cost of Gas Revenues recovered	(line 16 + 22)	**$ 55,913,248**	
24	**2016/2017 Base GCR Factor - Per Mcf**	(line 15 + 21)	**$ 3.3249**	per Mcf

Sources :
(1) Exhibit A-7, Page 1, Line 13, less Hedging Costs (Exhibit A-7, page 4, line 11).
(2) Exhibit A-7, Page 1, Line 23.
(3) Exhibit A-7, Page 1, Line 25.
(4) Exhibit A-7, Page 4, Line 11.
(5) Exhibit A-17, Page 1, columns (c), (d) & (e) mulitipled by the avg. cost of gas for 2016-17 GCR period (3.5153 or the sum of lines 1-4, divided by line 20).
(6) Exhibit A-16, Page 2 of 2, Line 13.
(7) Exhibit A-16, Page 1 of 2, Line 13.
(8) Worpaper WP A-15-1, page 1 of 20, line 20 plus line 22.
(9) Exhibit A-17, Page 1, column (f).

MICHIGAN PUBLIC SERVICE COMMISSION
MICHIGAN GAS UTILITIES CORPORATION

Case No.: U-17940
Exhibit: A-17 (DJT-4) Page 3 of 4
Witness: David J. Tyler

Computation of Revenue Collected Through
Application of the Base GCR Factor for
the Plan Period Ending March 31, 2016

Line	Month	Base GCR Factor ($/Mcf)	Billed Volumes (MMcf)	GCR Revenue Collected (000's Omitted)
	(a)	(b)	(c)	(d)
1	April 2016	$ 3.3249	2,208.3	$ 7,342.4
2	May	3.3249	1,282.8	4,265.2
3	June	3.3249	246.3	818.9
4	July	3.3249	297.2	988.2
5	August	3.3249	274.0	911.0
6	September	3.3249	297.9	990.5
7	October	3.3249	506.5	1,684.1
8	November	3.3249	923.4	3,070.2
9	December	3.3249	1,983.5	6,594.9
10	January 2017	3.3249	2,873.0	9,552.4
11	February	3.3249	2,572.1	8,552.0
12	March	3.3249	2,780.9	9,246.2
13	GCR Billed Revenue		16,245.9	54,016.0
14	Less: 2016 March Unbilled	3.3249	1,383.7	4,600.7
15	Plus: 2017 March Unbilled	3.3249	1,373.6	4,567.1
16	Total GCR Revenue Collected		16,235.8	53,982.4
17	GCC Surcharge Revenues	0.6303	3,063.2	1,930.7
18	Total Revenues Collected			$ 55,913.1

Michigan Public Service Commission
MICHIGAN GAS UTILITIES CORPORATION
Calculation of the Annual Base GCR Factor

Case No.: U-17940
Exhibit: A-17 (DJT-4) Page 4 of 4
Witness: David J. Tyler

DERIVATION OF THE RESERVATION SURCHARGE AND GAS COMMODITY CHARGE

Line		April 2016	May 2016	June 2016	July 2016	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017	February 2017	March 2017	12 Mos Ended Total
1	**Total GCR Supply - Mcf**	1,431,400	721,300	328,900	325,900	303,900	388,300	896,800	1,481,500	2,643,400	2,909,100	2,570,600	2,392,300	16,393,400
2	Less Volumes for -													
3	Company Use	4,200	4,200	4,800	2,200	4,900	100	5,600	6,000	3,600	5,600	5,700	6,700	53,600
4	Lost and Unaccounted For	14,000	9,100	6,400	6,000	6,300	6,600	11,200	15,700	23,100	27,000	24,800	22,500	172,700
5	Plus - Gas In Kind	5,200	4,400	4,000	4,100	4,400	4,100	5,300	6,000	6,500	8,400	8,600	7,700	68,700
6	Total GCR Sales - Mcf	1,418,400	712,400	321,700	321,800	297,100	385,700	885,300	1,465,800	2,623,200	2,884,900	2,548,700	2,370,800	16,235,800
7														
8	**Sales Mcf**													
9	Rate Schedule Sales (Billed and Unbilled)	1,418,401	712,400	321,677	321,855	297,072	385,755	885,357	1,465,767	2,623,181	2,884,874	2,548,708	2,370,793	16,235,840
10	GCC Volumes	210,381	121,079	127,415	50,881	69,026	67,437	194,677	354,310	467,028	563,911	454,885	382,121	3,063,151
11	Total Sales and GCC Volumes - Mcf	1,628,782	833,479	449,092	372,736	366,098	453,192	1,080,034	1,820,077	3,090,209	3,448,785	3,003,593	2,752,914	19,298,991
12														
13	**Cost of Gas Sold ($)**													
14	Purchased and Produced - Demand Costs	$ 870,280	$ 705,016	$ 705,016	$ 705,016	$ 705,016	$ 705,016	$ 705,016	$ 1,633,514	$ 1,633,514	$ 1,633,514	$ 1,633,514	$ 1,633,514	$ 13,267,943
15	Capacity Release Credits	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Pipeline Demand/Supply Reservation Costs	870,280	705,016	705,016	705,016	705,016	705,016	705,016	1,633,514	1,633,514	1,633,514	1,633,514	1,633,514	13,267,943
17														
18	Purchased and Produced - Volumetric Costs	4,171,543	4,026,265	3,050,035	3,182,038	3,150,055	3,294,935	2,545,516	2,387,924	4,120,124	4,578,944	4,197,037	3,963,746	42,668,163
19	Net (To) / From Storage - Volumetric Costs	(573,850)	(2,260,005)	(2,229,243)	(2,351,893)	(2,370,186)	(2,297,749)	(281,786)	1,410,274	2,921,738	3,348,785	2,815,759	2,507,707	639,551
20	Hedging Costs	108,406	99,610	88,766	73,290	54,812	36,666	22,810	9,510	4,100	-	-	-	497,970
21	Total Cost Of Gas	4,576,379	2,570,886	1,614,574	1,608,451	1,539,697	1,738,868	2,991,556	5,441,222	8,679,476	9,561,243	8,646,310	8,104,967	57,073,628
22	Cost Of Gas For -													
23	Company Use	(14,764)	(14,764)	(16,873)	(7,734)	(17,225)	(352)	(19,686)	(21,092)	(12,655)	(19,686)	(20,037)	(23,552)	(188,420)
24	Lost and Unaccounted For	(49,214)	(31,989)	(22,498)	(21,092)	(22,146)	(23,201)	(39,371)	(55,190)	(81,203)	(94,913)	(87,179)	(79,094)	(607,091)
25	Gas In Kind	18,280	15,467	14,061	14,413	15,467	14,413	18,631	21,092	22,849	29,528	30,232	27,068	241,501
26	Total Cost of Gas Sold	$ 4,530,680	$ 2,539,600	$ 1,589,264	$ 1,594,038	$ 1,515,793	$ 1,729,728	$ 2,951,130	$ 5,386,032	$ 8,608,467	$ 9,476,173	$ 8,569,325	$ 8,029,388	56,519,617
27														
28	**GCR Revenues ($)**													
29	Net Demand/Supply Reservation costs	$ 870,280	$ 705,016	$ 705,016	$ 705,016	$ 705,016	$ 705,016	$ 705,016	$ 1,633,514	$ 1,633,514	$ 1,633,514	$ 1,633,514	$ 1,633,514	$ 13,267,943
30	2015/2016 Projected Rsrv. Chrg Over-Recovery	(1,102,928)	-	-	-	-	-	-	-	-	-	-	-	(1,102,928)
31	Total 2016/2017 Reservation Costs													$ 12,165,015
32														
33	Total Sales and GCC Volumes - Mcf	1,628,782	833,479	449,092	372,736	366,098	453,192	1,080,034	1,820,077	3,090,209	3,448,785	3,003,593	2,752,914	19,298,991
34														
35	**Proposed Reservation Charge - per Mcf**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	**$ 0.6303**	
36	Reservation Revenues	$ 1,026,621	$ 525,342	$ 283,063	$ 234,936	$ 230,752	$ 285,647	$ 680,745	$ 1,147,195	$ 1,947,759	$ 2,173,769	$ 1,893,165	$ 1,735,162	12,164,154
37														
38	Total Cost of Gas Sold	$ 4,530,680	$ 2,539,600	$ 1,589,264	$ 1,594,038	$ 1,515,793	$ 1,729,728	$ 2,951,130	$ 5,386,032	$ 8,608,467	$ 9,476,173	$ 8,569,325	$ 8,029,388	56,519,619
39	Less: Reservation Revenues	(1,026,621)	(525,342)	(283,063)	(234,936)	(230,752)	(285,647)	(680,745)	(1,147,195)	(1,947,759)	(2,173,769)	(1,893,165)	(1,735,162)	(12,164,154)
40	Commodity Cost of Gas Sold	3,504,059	2,014,258	1,306,201	1,359,103	1,285,041	1,444,081	2,270,385	4,238,837	6,660,708	7,302,404	6,676,160	6,294,226	44,355,464
41	2015/2016 Projected Rsrv. Chrg Over-Recovery	(1,102,928)	-	-	-	-	-	-	-	-	-	-	-	(1,102,928)
42	2015/2016 Projected GCR Under-Recovery	$ 496,771	-	-	-	-	-	-	-	-	-	-	-	496,771
43	Total 2016/2017 Projected Gas Costs													**$ 55,913,460**
44														
45	**Proposed Gas Commodity Cost - per Mcf**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	**$ 2.6946**	
46	Gas Commodity Cost Revenues	$ 3,822,023	$ 1,919,633	$ 866,791	$ 867,270	$ 800,490	$ 1,039,455	$ 2,385,683	$ 3,949,656	$ 7,068,424	$ 7,773,581	$ 6,867,749	$ 6,388,339	$ 43,749,094
47														
48	**Total GCR Factor Billed**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	**$ 3.3249**	
49														
50	Total Cost of Gas Revenues	$ 4,848,645	$ 2,444,975	$ 1,149,854	$ 1,102,206	$ 1,031,242	$ 1,325,102	$ 3,066,428	$ 5,096,850	$ 9,016,182	$ 9,947,351	$ 8,760,913	$ 8,123,501	$ 55,913,248
51														
52	Over / (Under) Recovery	$ 924,121	$ (94,625)	$ (439,410)	$ (491,832)	$ (484,551)	$ (404,626)	$ 115,298	$ (289,182)	$ 407,715	$ 471,178	$ 191,588	$ 94,112	$ (213)
53	Cumulative Over / (Under) Recovery	$ 924,121	$ 829,496	$ 390,086	$ (101,746)	$ (586,297)	$ (990,923)	$ (875,625)	$ (1,164,807)	$ (757,091)	$ (285,914)	$ (94,325)	$ (213)	

Michigan Public Service Commission
MICHIGAN GAS UTILITIES CORPORATION

WP A-17-1

Sales Volumes - Summary

LINE	DESCRIPTION	April 15	May 15	June 15	July 15	August 15	September 14	October 14	November 14	December 14	January 15	February 15	March 15	12 MONTH TOTAL	LINE
	(a)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(b)	(c)	(d)	(n)	
1	Current Month Unbilled (1)	456,642	17,151	212,390	83,274	207,772	221,369	629,504	1,679,332	1,636,993	2,058,427	2,360,310	1,269,768	10,832,932	1
2	Total GCR Sales (2)	1,090,666	522,837	691,820	217,303	421,215	364,503	909,110	2,130,256	2,391,907	3,286,012	3,372,545	2,191,664	17,589,838	2
	Percent Unbilled	42%	3%	31%	38%	49%	61%	69%	79%	68%	63%	70%	58%		

		April 15	May 15	June 15	July 15	August 15	September 15	October 15	November 15	December 15	January 16	February 16	March 16	12 MONTH TOTAL	
3	Residential & Multi-Family Billed	1,605,718	939,977	190,876	221,636	199,693	214,396	364,297	669,648	1,433,891	2,086,061	1,872,365	2,035,631	11,834,189	3
4	Prior Month Unbilled	(1,002,600)	(434,300)	(17,200)	(77,000)	(89,900)	(106,900)	(166,300)	(445,900)	(833,400)	(1,302,000)	(1,314,600)	(1,300,600)	(7,090,700)	4
5	Current Month Unbilled	434,300	17,200	77,000	89,900	106,900	166,300	445,900	833,400	1,302,000	1,314,600	1,300,600	1,012,400	7,100,500	5
6	Sales	1,037,418	522,877	250,676	234,536	216,693	273,796	643,897	1,057,148	1,902,491	2,098,661	1,858,365	1,747,431	11,843,989	6
7	General Services Billed	602,583	342,823	55,401	75,619	74,279	83,559	142,260	253,719	549,590	786,913	699,743	745,262	4,411,751	7
8	Prior Month Unbilled	(381,100)	(159,500)	(6,200)	(21,800)	(33,500)	(39,600)	(68,000)	(167,200)	(322,100)	(493,200)	(492,500)	(483,100)	(2,667,800)	8
9	Current Month Unbilled	159,500	6,200	21,800	33,500	39,600	68,000	167,200	322,100	493,200	492,500	483,100	361,200	2,647,900	9
10	Sales	380,983	189,523	71,001	87,319	80,379	111,959	241,460	408,619	720,690	786,213	690,343	623,362	4,391,851	10
11	Total GCR Billed	2,208,301	1,282,800	246,277	297,255	273,972	297,955	506,557	923,367	1,983,481	2,872,974	2,572,108	2,780,893	16,245,940	11
12	Prior Month Unbilled	(1,383,700)	(593,800)	(23,400)	(98,800)	(123,400)	(146,500)	(234,300)	(613,100)	(1,155,500)	(1,795,200)	(1,807,100)	(1,783,700)	(9,758,500)	12
13	Current Month Unbilled	593,800	23,400	98,800	123,400	146,500	234,300	613,100	1,155,500	1,795,200	1,807,100	1,783,700	1,373,600	9,748,400	13
14	Total GCR Sales	1,418,401	712,400	321,677	321,855	297,072	385,755	885,357	1,465,767	2,623,181	2,884,874	2,548,708	2,370,793	16,235,840	14

(1) September 2013 through August 2014 Actual volumes - Exhibit A-4, Page 1 of 6, line # 10 (For 2013 data refer to Case No. U-17130-R. For 2014 data, refer to Case No. U-17331-R.)
(2) September 2013 through August 2014 Actual volumes - Exhibit A-4, Page 1 of 6, line # 11 (For 2013 data refer to Case No. U-17130-R. For 2014 data, refer to Case No. U-17331-R.)

Gas Choice Volumes

LINE	DESCRIPTION	April 15	May 15	June 15	July 15	August 15	September 14	October 14	November 14	December 14	January 15	February 14	March 15	12 MONTH TOTAL	LINE
	(a)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(b)	(c)	(d)	(n)	
15	Current Month Unbilled (3)	96,178	3,638	65,783	18,902	48,268	54,012	152,149	402,706	373,988	451,844	501,978	267,047	2,436,493	15
16	Total Choice Volumes (4)	230,105	111,596	170,605	31,756	98,300	87,926	219,222	509,645	527,405	706,660	703,187	455,355	3,851,762	16
	Percent Unbilled	42%	3%	39%	60%	49%	61%	69%	79%	71%	64%	71%	59%		

		April 14	May 14	June 14	July 14	August 14	September 14	October 14	November 14	December 14	January 15	February 15	March 15	12 MONTH TOTAL	
17	Gas Choice Volumes -Billed	345,081	205,079	82,215	69,681	65,426	59,937	100,977	209,410	415,828	534,511	490,785	482,721	3,061,651	17
18	Prior Month Unbilled	(222,600)	(87,900)	(3,900)	(49,100)	(30,300)	(33,900)	(41,400)	(135,100)	(280,000)	(331,200)	(360,600)	(324,700)	(1,900,700)	18
19	Current Month Unbilled	87,900	3,900	49,100	30,300	33,900	41,400	135,100	280,000	331,200	360,600	324,700	224,100	1,902,200	19
20	Sales	210,381	121,079	127,415	50,881	69,026	67,437	194,677	354,310	467,028	563,911	454,885	382,121	3,063,151	20

(3) September 2014 through August 2015 Actual volumes - Exhibit A-4, Page 1 of 6, line # 14 (For 2014 data refer to Case No. U-17331-R. For 2015 data, refer to Case No. U-17690-R.)
(4) September 2014 through August 2015 Actual volumes - Exhibit A-4, Page 1 of 6, line # 15 (For 2014 data refer to Case No. U-17331-R. For 2015 data, refer to Case No. U-17690-R.)

TRANSPORTATION SERVICE OPTIONS

FIRM TRANSPORTATION SERVICE (FTS)

- A firm nominated transportation service. (Service is offered by both pipelines)
- Hourly flows are limited to 1/24 of daily nomination not to exceed MDQ.
- Delivery points are restricted to individual city gate stations.
- MDQ must be specified by individual receipt points, delivery points and transportation route.
- Transportation will be provided on a "best efforts" basis from secondary receipt to secondary delivery points.
- Panhandle requires flow-control devices at delivery points in order to receive service; otherwise a customer must contract for Enhanced Firm Transportation Service (EFT).

ENHANCED FIRM TRANSPORTATION SERVICE (EFT)

- A firm nominated transportation service. (Service is offered by both pipelines)
- Permits hourly flow variations of up to 50% (1/16) of daily nomination not to exceed MDQ.
- A rate premium is charged above FTS service.
- ANR allows for the aggregation of multiple city gate stations into geographic delivery points/areas.
- ANR allows greater delivery point flexibility if the delivery points are served entirely under Enhanced Transportation Service (ETS) service.
- ANR allows for greater flexibility of delivery point no-notice service when a customer combines no-notice service with ETS.

TRANSPORTATION SERVICE OPTIONS (contd.)

INTERRUPTIBLE TRANSPORTATION SERVICE (ITS)

- An interruptible nominated transportation service. (Service is offered by both pipelines)
- Contract MDQ's are not required.
- Provides access to all receipt and delivery points on an interruptible basis.
- Panhandle requires flow control devices at delivery points in order to receive service; otherwise a customer must contract for Enhanced Interruptible Transportation Service (EIT).
- Uniform hourly deliveries required. However, under Panhandle's EIT service, customers are permitted hourly flow variations of 50% (1/16) of their daily nomination not to exceed MDQ.

Parking/Loan Option

- ANR Short term storage option, generally on an interruptible basis with negotiated rates based on market conditions.

Wheeling Option

- ANR Interruptible Wheeling option, allows ANR customers to facilitate transactions within the Joliet Hub. Gas can be wheeled from any interconnect to the Hub Point to facilitate Parking and Lending, or to any interconnect within the Hub. Wheeling option price differentials will be based on the various pipeline's market conditions.

NO-NOTICE SERVICE (NNS) OPTIONS

- A firm unscheduled service in which nominations are not required. (Service is available from both pipelines)
- Does not allow for deliveries in excess of transportation entitlements (MDQ's).

ANR'S NNS Service

- ANR requires that a NNS customer have a designated storage account under Rate Schedule FSS and a designated notice transportation agreement under either Rate Schedule FTS or ETS.
- The difference between a customer's transport delivery point nomination and the allocated delivery point quantities shall be deemed a no-notice quantity and allocated as an injection to or withdrawal from the customer's designated storage account up to the customer's NNS entitlement.
- If NNS service is delivered under an ETS agreement, delivery point quantities will be netted across the shipper's delivery points up to its NNS entitlement.

Panhandle's NNS Service

- A customer is eligible for Panhandle's NNS service under Rate Schedule GDS (General Delivery Service) if it has an executed transportation agreement under either Rate Schedule EFT of SCT and a storage agreement under Rate Schedule IOS (In/Out Storage Service).
- GDS customers must permit Panhandle to manage their transportation and storage services. This provision relieves the shipper of submitting nominations at their delivery points.
- A GDS customer may also combine Panhandle's other storage services under Rate Schedule WS (Winter Service), PS (Peaking Service), and FS (Flexible Service) into its GDS service.
- In lieu of providing delivery point nominations, Panhandle requires GDS customers to nominate gas at receipt points and provide Panhandle with a priority plan on how Panhandle can manage the customer's storage services.

NO-NOTICE SERVICE (NNS) OPTIONS (contd.)

Panhandle's NNS Service (Cont'd)

- No notice service is provided up to the shipper's maximum daily withdrawal quantity designated under Rate Schedules IOS, PS, WS, and FS.
- The GDS service is available only at a single delivery point. However, multiple measuring stations belonging to a single operator may be treated as a single point of delivery.
- The maximum daily withdrawal quantity under Rate Schedule IOS may not be less than 20% of the MDQ specified in the transportation agreement.

FIRM STORAGE SERVICE (FSS) OPTIONS

ANR

- A firm nominated storage service under Rate Schedule FSS.
- Customers may choose from a seasonal and annual service, with or without ratchets from November through March.
- Annual storage service option permits year-round injections and withdrawals, but the customer is limited to cycling its storage balance to only once a year.
- The following limitations are imposed upon ratcheted service:
    - Injections decrease to 80% of the MDIQ when storage balance exceeds 90% of MSQ.
    - Withdrawals decrease to 80% of the MDWQ when storage balance is equal to or below 25% of MSQ and decreases to 60% of MDWQ when storage balance is equal to or below 5% of MSQ.
- ANR's annual and unratcheted storage service options command a premium over seasonal/ratcheted service.

FIRM STORAGE SERVICE (FSS) OPTIONS (contd.)

Panhandle

- Provides a firm nominated annual storage service under Rate Schedule IOS and a firm nominated seasonal storage service under Rate Schedules WS (Winter Service) and PS (Peaking Service). Panhandle also provides a nominated storage service under Rate Schedule FS (Flexible Service) that allows customers to tailor the use of storage more to their individual needs.

- MDIQ equal to 1/200 of MSQ (Maximum Storage Quantity).

- MDWQ equal to 1/71 of MSQ for PS and 1/100 of MSQ for IOS and WS service.

- FS and WS customers are given the choice of using field or market area storage facilities. Panhandle uses its field storage to provide IOS service and its market storage to provide PS service. Panhandle charges different rates for market and field storage services.

- No ratchet provisions are applicable to IOS. A WS customer's available withdrawal quantities are reduced to 75% of the MDWQ when its storage balance is between 30% and 10% of the MSQ and reduced to 60% of the MDWQ when the storage balance is below 10% of the MSQ. Similarly, a PS customer's available storage quantities are reduced to 44% of the MDWQ when the storage balance is between 30% and 10% and reduced to 11% when the storage balance is below 10% of MSQ.

INTERRUPTIBLE STORAGE SERVICE (ISS) OPTIONS

INTERRUPTIBLE ANNUAL STORAGE SERVICE

- An interruptible nominated annual storage service (Service is offered by ANR under Rate Schedule **DDS** and Panhandle under Rate Schedule **IIOS**. Consumers Energy also provides an interruptible annual storage service.)
- Permits year-round injections and withdrawals on an interruptible basis.
- Panhandle uses field area storage to provide this service. All other service providers utilize market area storage facilities.
- Maximum daily injections and withdrawals as established by the agreement.

INTERRUPTIBLE SEASONAL STORAGE SERVICE

- An interruptible nominated seasonal storage service. (Service is only offered by Panhandle.)
- Permits injections in the summer and withdrawals in the winter, on an interruptible basis.
- Utilizes field area storage facilities.
- MDIQ equal to 1/200 of MSQ.
- MDWQ equal to 1/100 of MSQ.

Legal and Regulatory Actions Taken At the Federal Level
To Minimize the Cost of Purchased Gas

WEC takes an active role in monitoring and participating in appropriate pipeline regulatory and legal proceedings. As the natural gas and pipeline businesses continue to evolve, identifying the direct financial and operational impact from various filings can become more challenging. WEC believes that active participation in federal regulatory proceedings is effective in protecting the interest of its customers.

The following list itemizes the FERC dockets in which WEC has participated/intervened and/or is monitoring during the past year and dockets being monitored that remain active from previous years:

Pipeline	Docket No.	Description
ANR	RP13-0743	Annual Deferred Transportation Cost Adjustment (DTCA) filing
ANR	CP14-0487	Filing to Realign Storage
ANR	CP14-0514	Filing of a Proposal for Sulphur Springs Compression
ANR	CP14-0540	Filing to Expand Existing Interconnection with REX
ANR	RP14-0650	Annual Deferred Transportation Cost Adjustment (DTCA) filing
ANR	CP15-0021	Filing to Replace a Compressor Station
ANR	RP15-0139	Filing of Conversion of Certain ANR/Great Lakes Contracts
ANR	RP15-0274	Filing about Certain Open Seasons
ANR	RP15-0533	Annual Fuel Reimbursement filing
ANR	RP15-0785	Annual Deferred Transportation Cost Adjustment (DTCA) filing
ANR	RP15-0915	Annual Report of Operational Purchases & Sales
ANR	RP15-0931	Annual Cash Out Surcharge Reconciliation filing
ANR	RP15-1257	Compliance filing for Sulphur Springs Incremental Fuel Rate
GLGT	RP15-0138	Filing of Conversion of Certain ANR/Great Lakes Contracts
PEPL	RP14-0873	Commission's Show Cause order Concerning Posting of Capacity Releases
PEPL	RP15-0011	Fuel Reimbursement Adjustment filing
PEPL	CP15-0094	Filing of a System Expansion to Support Backhaul Service
PEPL	RP15-0568	Fuel Reimbursement Adjustment filing
PEPL	RP15-0702	Annual filing to Update System Maps
PEPL	RP15-0769	Annual Flow-Through of Penalty Revenues

Legal and Regulatory Actions Taken At the Federal Level
To Minimize the Cost of Purchased Gas

Pipeline	Docket No.	Description
PEPL	RP15-0783	Annual Cash-Out Surcharge Reconciliation filing
PEPL	RP15-1306	Housekeeping Tariff filing
PEPL	RP16-0002	Fuel Reimbursement Adjustment filing

In addition to the above-identified FERC dockets, WEC also participates in generic activities at the federal level. As a member of the American Gas Association (AGA), WEC is kept apprised of issues and also has the opportunity to participate with other LDC's.

MICHIGAN GAS UTILITIES CORPORATION
M.P.S.C. No. 2 - Gas
(Updated GCR Factor)

Case No. U-17940
Exhibit: A-20 (DJT-7)
Witness: David J. Tyler

GCR CEILING PRICE CONTINGENCY MATRIX

Fractional Multi Fm		0.976						
Reservation Charge		$0.6303						
Plan NYMEX (Xplan)		$2.6946						
Base GCR Factor		$3.3249						
NYMEX Increase					**NYMEX Increase**			
Greater than or Equal to	But less than	The Maximum Allowed GCR Factor Adjustment ($/Mcf)			Greater than or Equal to	But less than	The Maximum Allowed GCR Factor Adjustment ($/Mcf)	
$0.00	$0.05	3.3249			$1.55	$1.60	4.8377	
$0.05	$0.10	3.3737			$1.60	$1.65	4.8865	
$0.10	$0.15	3.4225			$1.65	$1.70	4.9353	
$0.15	$0.20	3.4713			$1.70	$1.75	4.9841	
$0.20	$0.25	3.5201			$1.75	$1.80	5.0329	
$0.25	$0.30	3.5689			$1.80	$1.85	5.0817	
$0.30	$0.35	3.6177			$1.85	$1.90	5.1305	
$0.35	$0.40	3.6665			$1.90	$1.95	5.1793	
$0.40	$0.45	3.7153			$1.95	$2.00	5.2281	
$0.45	$0.50	3.7641			$2.00	$2.05	5.2769	
$0.50	$0.55	3.8129			$2.05	$2.10	5.3257	
$0.55	$0.60	3.8617			$2.10	$2.15	5.3745	
$0.60	$0.65	3.9105			$2.15	$2.20	5.4233	
$0.65	$0.70	3.9593			$2.20	$2.25	5.4721	
$0.70	$0.75	4.0081			$2.25	$2.30	5.5209	
$0.75	$0.80	4.0569			$2.30	$2.35	5.5697	
$0.80	$0.85	4.1057			$2.35	$2.40	5.6185	
$0.85	$0.90	4.1545			$2.40	$2.45	5.6673	
$0.90	$0.95	4.2033			$2.45	$2.50	5.7161	
$0.95	$1.00	4.2521			$2.50	$2.55	5.7649	
$1.00	$1.05	4.3009			$2.55	$2.60	5.8137	
$1.05	$1.10	4.3497			$2.60	$2.65	5.8625	
$1.10	$1.15	4.3985			$2.65	$2.70	5.9113	
$1.15	$1.20	4.4473			$2.70	$2.75	5.9601	
$1.20	$1.25	4.4961			$2.75	$2.80	6.0089	
$1.25	$1.30	4.5449			$2.80	$2.85	6.0577	
$1.30	$1.35	4.5937			$2.85	$2.90	6.1065	
$1.35	$1.40	4.6425			$2.90	$2.95	6.1553	
$1.40	$1.45	4.6913			$2.90	$2.95	6.1553	
$1.45	$1.50	4.7401			$2.95	$3.00	6.2041	
$1.50	$1.55	4.7889			$3.00		6.2529	

MICHIGAN DEPARTMENT OF LABOR AND ECONOMIC GROWTH
PUBLIC SERVICE COMMISSION

ENTRY OF APPEARANCE IN AN ADMINISTRATIVE HEARING

This form is issued as provided for by 1939 PA 3, as amended, and by 1933 PA 254, as amended. The filing of this form, or an acceptable alternative, is necessary to ensure subsequent service of any hearing notices, Commission orders, and related hearing documents.

General Instructions:

Type or print legibly in ink. For assistance or clarification, please contact the Public Service Commission at (517) 241-6170.

Please Note: The commission will provide service of documents in this proceeding to only one person for each party.

THIS APPEARANCE TO BE ENTERED IN ASSOCIATION WITH THE ADMINISTRATIVE HEARING:

Case / Company Name: Michigan Gas Utilities Corporation Docket No. U-17940

Please enter my appearance in the above-entitled matter on behalf of:

1. (Name)	Michigan Gas Utilities Corporation
2. (Name)	
3. (Name)	
4. (Name)	
5. (Name)	
6. (Name)	
7. (Name)	

Name Sherri A. Wellman

Address One Michigan Avenue

Suite 900

City Lansing State MI

Zip 48933 Phone (517) 487-2070

Email wellmans@millercanfield.com

Date 12/30/2015

Signature: Sherri A. Wellman

Digitally signed by: Sherri A. Wellman
DN: CN = Sherri A. Wellman C = AD/O = MillerCanfield
Date: 2015.12.30 10:52:57 -04'00'

☐ I am not an attorney

☒ I am an attorney whose:

Michigan Bar # is P- 38989

Bar # is: (state)

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Please enter my appearance in the above-entitled matter on behalf of:

1. (Name)	Michigan Gas Utilities Corporation
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3. (Name)	
4. (Name)	
5. (Name)	
6. (Name)	
7. (Name)	

Name Paul M. Collins

Address One Michigan Avenue

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Email collinsp@millercanfield.com

Date 12/30/2015

Signature: Paul M. Collins Digitally signed by: Paul M. Collins DN: CN = Paul M. Collins C = AD O = Miller Canfield Date: 2015.12.30 10:53:11 -04'00'

☐ I am not an attorney

☒ I am an attorney whose:

Michigan Bar # is P- 69719

Bar # is: (state)

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1. (Name)	Michigan Gas Utilities Corporation
2. (Name)	
3. (Name)	
4. (Name)	
5. (Name)	
6. (Name)	
7. (Name)	

Name Theresa A. G. Staley

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Date 12/30/2015

Signature: Theresa A. G. Staley

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DN: CN = Theresa A. G. Staley C = AD O = Miller Canfield
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☐ I am not an attorney

☒ I am an attorney whose:

Michigan Bar # is P- 56998

_____ Bar # is: _____
(state)