

# **Gas Royalty-In-Kind in the Gulf of Mexico**

## **An Analysis**

### **Executive Summary**

This report covers two Royalty-in-Kind (RIK) pilots beginning in December 1999 and ending in September 2002. In one pilot (GSA Pilot), the Minerals Management Service (MMS) took gas from offshore Texas leases and provided the gas to the General Services Administration (GSA) for use in its facilities. This pilot was intended to further test the MMS's ability to sell its royalty share of gas in kind and to provide gas to the GSA with an ultimate savings to the Federal government.

The second pilot (Greater Gulf of Mexico Pilot) addressed in this report involved several pipeline systems. This pilot expanded the RIK program to select leases across the Gulf of Mexico (GOM) and tested the MMS's ability to effectively sell larger portions of its royalty gas from the GOM.

#### **Background**

The MMS published a study in 1997 assessing the feasibility of taking the government's royalty share of production in kind. As a result of that study, the MMS undertook a series of pilots to test the RIK concept. The MMS has previously published two reports regarding these pilot efforts. The first report covered an oil RIK pilot conducted with the State of Wyoming. The second report addressed a small pilot in the GOM involving natural gas which was undertaken in partnership with the State of Texas General Land Office. The following criteria have formed a basis for evaluating the success of these pilots:

- Simplicity, accuracy, certainty for lessees and government;
- Revenue neutrality (or better) for government; and
- Administrative burden for lessees and government.

The Government Accountability Office issued a report reviewing the RIK program. The report provided recommendations for future RIK activities and concluded that generally, the value received for the RIK gas and oil was equal to or slightly greater than the values that would have been received if the MMS had taken its royalty share in value. The MMS has developed a five-year plan for the RIK program that includes the GAO recommendations.

#### **GSA Pilot**

The MMS and the GSA entered into an agreement to take gas in kind from a few leases off the Texas coast. The gas was provided to the GSA for use in its facilities. The pilot involved a series of gas-exchange transactions between the MMS, an exchange contractor, and the GSA (through its agent). During the 16-month pilot period, the MMS sold approximately 85 million MMBtu with a value slightly in excess of \$341 million.

Partly because of the complexities of the transactions and partly due to the fact that the MMS could not contract directly for transportation, the GSA pilot did not provide the MMS with any revenue uplifts. The MMS did learn lessons regarding the transportation of gas to market and the complexities of gas balancing.

### **Greater Gulf of Mexico Pilot**

The expanded Gulf of Mexico gas RIK pilot included nine pipeline systems for varying lengths of time. The earliest began in April 2000 and the MMS continues to take gas in kind on these systems. For the purposes of this analysis, all systems were updated through September 2002. During this time period, the MMS sold in excess of 202 million MMBtu with a value just over \$767 million.

During this pilot period the MMS implemented and refined many aspects of selling the government's share of gas in kind. These provide the basis for the MMS's ongoing RIK program. Among the lessons learned were:

- The advantages and disadvantages of selling gas in base load and swing packages as well as some combination of the two,
- The need to monitor gas balances on each system and make adjustments regarding the gas available for sale in a timely manner in order to avoid extra costs involved in purchasing additional volumes to balance the gas account,
- The advantages and disadvantages of selling gas and retaining processing rights, and when to invoke those rights, and
- The continued improvement of the gas in kind sale process.

### **RIK/Royalty In Value (RIV) Comparison**

A comparison was made for four transportation systems. Data for payors reporting royalties in value were compared to the MMS RIK contract sales data for each of these systems. The MMS RIK price was consistently greater than a majority of the prices reported by payors who paid their royalties in value. Overall the MMS realized an estimated uplift of approximately \$3.5 million or \$0.030 per MMBtu.

### **Transportation Analysis**

The physical transportation aspects are not the same for any two pipeline systems. The MMS had to develop a significant understanding of each system on which it was taking gas in kind. MMS believes that having the ability to contract for transportation services provides it with one mechanism for increasing the net revenue from the Nation's offshore gas resources.

In this report, the MMS analyzed data from four of the pipeline systems from which gas was taken in kind. Comparing the transportation costs related to the RIK gas on these four systems with the transportation rates recouped by payors paying their royalties in value indicates that MMS RIK realized approximately \$561,000 or about 1¢ per MMBtu additional value for the government.

### **Comparison to Published Indices**

All MMS contracts for the sale of RIK gas are based on published index prices. The MMS compared the values received for its RIK gas to the appropriate indices for each pipeline system. Analyses were done for both the base load and swing volumes. For the four pipeline systems analyzed, the MMS calculated what it might have received for its volumes using the appropriate index averages to what it actually received under its contracts. The RIK gas for the four systems had a contract value of \$763 million. This exceeded the average index value by approximately \$380,000 or 0.04 per cent.

### **Early Reporting**

Because RIK payments are due approximately five days earlier than in value royalty payments, the MMS realized a benefit of about \$715,000 during the analysis period.

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## An Analysis

### Purpose

In the mid-1990's, MMS began exploring the potential for a broadly applied Royalty-In-Kind (RIK) program to increase efficiencies, decrease conflicts, and enhance net revenues generated from oil and gas production royalties. The MMS has engaged in several pilot projects to test this approach under a variety of conditions for crude oil and natural gas, both onshore and offshore.

This report covers two RIK pilots beginning December 1999 and ending September 2002. In one pilot (GSA Pilot), the MMS took gas from Federal leases offshore Texas and provided the gas to the General Services Administration (GSA) for use in its facilities. This pilot was intended to further test the MMS's ability to sell its royalty share of gas in kind and to provide gas to the GSA with an ultimate savings to the Federal government.

The second pilot (Greater Gulf of Mexico Pilot) addressed in this report involved nine pipeline systems. This pilot expanded the RIK pilot to select leases across the Gulf of Mexico (GOM) and tested the MMS's ability to effectively sell larger portions of its royalty gas from the GOM.

### Background

The MMS published a study in 1997 assessing the feasibility of taking the government's royalty share of production in kind. As a result of that study, the MMS undertook a series of pilots to test the RIK concept. The MMS has previously published two reports regarding pilot efforts. The first report covered an oil RIK pilot conducted with the State of Wyoming. The second report addressed a small pilot in the GOM. This pilot involved natural gas and was undertaken in partnership with the State of Texas GLO. The following criteria have formed a basis for evaluating the success of these pilots:

- Simplicity, accuracy, certainty for lessees and government;
- Revenue neutral (or better) for government; and
- Reduced administrative burden for lessees and government.

Both the Wyoming oil and Texas gas pilot reports concluded that selective use of RIK modestly increased government revenue and provided other administrative benefits to both lessees and the government.

The MMS requested the Department of the Interior's Office of the Inspector General (OIG) review the RIK effort. In the fall of 2004, the OIG presented the results to MMS senior managers. The OIG briefing entitled "Evaluation of Vulnerabilities to Underreporting: Royalty-in-Value versus Royalty-in-Kind" concluded that RIV was more susceptible to underreporting than RIK primarily because RIV allows the lessee to establish the valuation basis and take deductions of transportation and processing costs. However in RIK, valuation is established through a fair market sale from which the MMS receives proceeds directly and the MMS negotiates and pays the actual costs of transportation and processing.

The OIG study also identified several opportunities for improved RIK controls and increased revenues. These included improving the process by which gas imbalances are reconciled; improving the credit approval process; implementing independent review procedures for all annual data entry processes until automated processes are implemented; and, MMS obtain legislative authorization to extend RIK contract terms for up to five years if such authorization is necessary. The MMS has implemented the OIG recommendations.

In a report issued in January 2003 and April 2004, the Government Accountability Office reviewed the MMS RIK pilots and made recommendations to:

- 1) Clarify the RIK Program’s strategic objectives to explicitly state that goals of the RIK Pilots include obtaining fair market value and collecting at least as much revenue as MMS would have collected in cash royalty payments, and
- 2) Identify and acquire key information needed to monitor and evaluate performance. Such information, as identified by MMS, should include the revenue impacts of all RIK sales, administrative costs of the RIK program, estimates of savings in avoiding potential litigation, and expected savings in auditing revenues.

In response, MMS has developed a 5-year plan for the RIK program that lays out the strategic objectives and goals for the program (available at [www.mrm.mms.gov/rikweb](http://www.mrm.mms.gov/rikweb)). In addition, key measures and indicators have been developed and are being monitored for the program. These measures will form the basis of future analyses of RIK program performance.

### **General Services Administration (GSA) Pilot**

The General Services Administration Pilot was conducted to test MMS’s ability to take and sell its royalty share of gas production (in kind) and provide gas to GSA for use in government owned facilities. It involved a small number of leases off the coast of Texas in the Gulf of Mexico. The pilot ran from December 1999 to March 2001.

There were three sales during this pilot. The sales involved gas production from leases that moved on several pipelines. These pipelines included the ANR Nearshore pipeline, the High Island Offshore System/Upper Texas Offshore System (HIOS/UTOS), the Pelican Gathering System (Pelican), the Transco/North High Island System (NHIS), the Stingray system, and the Bluewater-Columbia Gulf Transmission and Bluewater-Tennessee Gas Transmission system. A breakdown of the systems involved in each sale is provided in Figure 1.

<b>Sales Period</b>	<b>Pipeline System Successfully Bid</b>
December 1999 – March 2000	ANR Nearshore HIOS/UTOS Pelican Stingray
April 2000 – October 2000	ANR Nearshore HIOS/UTOS Pelican Transco/NHIS Bluewater – Columbia Gulf Transmission Bluewater – Tennessee Gas Pipeline
November 2000 – March 2001	ANR Nearshore HIOS/UTOS Pelican Transco/NHIS Stingray

Figure 1

Under the terms of the pilot, the MMS provided gas to the GSA by way of an interagency agreement (copy included as Attachment 1). The MMS selected certain offshore leases to offer for bid. The criteria for selection involved several factors. One of these factors was volume. The MMS generally selected leases with larger volumes in order to meet the GSA needs while limiting the administrative impact on the MMS. A second factor involved selecting leases flowing on the same pipelines. The MMS could aggregate greater volumes and limit the administrative impact related to the nominating and balancing<sup>1</sup> aspects of selling RIK gas. A third factor related to selecting leases on pipelines which had good liquidity and competition at the offshore and onshore accumulation and index pricing points.

The GSA pilot required three separate transactions.

1. The first transaction – negotiated by the MMS - involved the exchange of RIK gas at or near the lease for gas at an onshore pooling point. The MMS requested offers from companies (exchange contractors) to perform this service. In return for performing this service, the exchange contractor would receive a fixed percentage of the volume transported. The exchange contractor would deliver the gas to a purchaser acting as an agent for the GSA at an agreed upon onshore pooling point. In exchange for providing this service, the company would receive a share of the volume shipped. This type of agreement was necessary because the MMS had no legal authority to contract for the transportation necessary to get the production to the point where the GSA's agent accepted delivery. This type of agreement proved to be cumbersome. It did however provide the MMS with some valuable lessons - see below - concerning the accounting for gas sales – both on a monthly and daily basis.
2. The second transaction involved the GSA – through its agent - selling the gas either for use in government facilities or in commercial sales.
3. The third transaction involved a payment to the MMS by GSA's agent. In the event that GSA's agent received an uplift in value in excess of the agreed upon index value, they would share the revenue increase on a 50/50 basis with the MMS/GSA.

Between the months of January 2000 and October 2000, the MMS realized a revenue uplift of \$67,267 (\$6,727/month) from the 50/50 contract arrangement. During the third contract period (November 2000 – March 2001) MMS did not benefit from a 50/50 arrangement.

In addition to the complex multiple-party accounting and production balancing aspects of this type of sale, the MMS recognized several other factors that have reinforced its initial apprehensions about exchange agreements.

1. The exchange agreement needed to be indexed to a monthly variable instead of being fixed for the contract period. The sale's periods were between four and seven months. The volume reductions received by the successful offerers – and their accompanying values - were significant due to the wide market fluctuations and the resulting impact on the fixed exchange factor during these sales periods. The third sales period included the two months December 2000 and January 2001. These months witnessed the rapid rise of prices to levels never before seen. Thus, the value the contractors received for the volume of gas they kept was substantially larger than the cost of the transportation service provided.

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<sup>1</sup> See the section Imbalances for a description of these terms.

2. The exchange agreement did not foster sufficient competition in the bidding process. MMS discovered that companies involved in midstream operations want gas at the end of the day, and not to just transport gas for MMS. The concept of aggregating gas was not a routine part of their business model. As a result, the final bidding round experienced a minimum number of offerers.
3. The exchange agreements were determined to be inconsistent with the Federal Energy Regulatory Commission (FERC) policy regarding buy/sell arrangements. The MMS received a one-year FERC waiver in order to continue the exchanges.

In the first two sales (December 1999 – October 2000) there were two companies sharing the exchange volume. In the third sale (November 2000 – March 2001) only one company took the exchange volume. Over the 16-month pilot period, the MMS sold approximately 175,000 MMBtu/day (85,056,462 MMBtu total) with a value of \$341,084,683. Of this volume, 3,495,656 MMBtu (4.12 per cent) was received by the shipper as the exchange volume. During the sales periods being analyzed, gas prices constantly increased. Assuming that the winning offerers could advantageously transport the MMS's exchange volume at a fairly constant rate - \$0.xx/MMBtu, the winning offerers stood to benefit from the negotiated exchange agreement since their values for the exchange volume were increasing while transport costs remained relatively static. However, in other market conditions – falling prices - the result would have been the reverse.

In order to estimate the impacts of the exchange transaction described above, the MMS performed the following analysis. For each month during a contract period on a pipeline system, the cost of exchanging the gas at a point on or near the lease with gas at a pool was calculated. The cost included the value (per MMBtu) of the exchange volume and the fuel costs. Two assumptions used in this analysis were as follows:

1. The total value of the exchange in the first month of a given contract period reflected a reasonably dynamic cost to move the gas from a point at or near the lease to an onshore pooling point. The cost included the transportation costs, a fee (if any) for performing this function, and the fuel costs charged by the pipeline. The difference between the exchange value in the first month and the exchange value in subsequent months of that contract may provide an indication of the revenue impacts related to transportation.
2. The costs of moving the gas from a point at or near the lease to an onshore pooling point do not change significantly from month to month.

During the December 1999 through March 2001 time frame, the MMS exchanged 85,056,462 MMBtu of gas. The analysis indicates that due to the fixed exchange factor and the rising gas values during that period, the MMS incurred approximately \$2,000,000 more in cost to move the gas from a point at or near the lease to an onshore pooling point than if gas prices had been stable. Conversely, it is certain that MMS would have increased their revenues for transportation in succeeding months when gas prices were falling.

There were three separate exchange contract periods during the December 1999 to March 2001 time period. In each subsequent contract period, the MMS increased the exchange ratio – requiring receipt of a proportionately greater share of gas at the onshore pooling point. The MMS recognized that in a market with constantly increasing prices, the exchange volume received by the exchange contractor would be worth more while their costs of providing the exchange service remained “constant”. This proved to be a significant negative factor against continuing exchange agreements in the future.

The MMS was unable to gather any information from the GSA regarding the revenue benefit it received as a result of using RIK gas from the exchange agreement instead of purchasing gas on the open market.

### **Conclusion/Lessons Learned – GSA Pilot**

The GSA Pilot was successful in several ways. It provided the MMS with experience in initiating and managing RIK contracts. It provided gas to the GSA for the use in government facilities. It provided the MMS with insight into which types of sales and transportation agreements were more beneficial to the government.

On the negative side, the GSA Pilot resulted in additional costs of approximately \$2,000,000 for transporting gas, only a small part of which was offset by a sales uplift of \$67, 267. The FERC ruled that the exchange agreement was inconsistent with their policy against buy/sell agreements in natural gas transportation, but granted a waiver that allowed the agreements to occur for a finite time period. The exchange sales did not foster much competition. Aggregating gas and transporting it was not a routine part of most company’s business model. The complexities involved in monitoring and balancing the numerous exchanges was overly burdensome. The problems exhibited by the exchange agreement underscore the need for robust authority to enter and pay for transportation contracts to successfully manage RIK volumes.

### **Greater Gulf of Mexico Pilot**

The gas RIK effort in the GOM discussed in this report includes nine pipeline systems for varying time periods. The time periods and pipelines included in this report are presented in Figure 2.

<b>Pipeline System</b>	<b>Time Period</b>
ANR Louisiana Pool/ANR Nearshore System Properties (ANR)	November 2000 – September 2002
Bluewater System – Tennessee Gas Pool 500 Leg	April 2000 – September 2002
Bluewater System – Columbia Pool	April 2000 – September 2002
Central Texas Gathering System (CTGS)	October 2000 – March 2001
CTGS Packages 1 & 2	April 2001 – September 2002
High Island Offshore System (HIOS) Packages 1 & 2	April 2001 – October 2001
HIOS Package 3	April 2001 – September 2002
Matagorda Offshore Pipeline System (MOPS) <sup>2</sup>	August 2000 – September 2002
Natural Gas Pipeline (NGPL) <sup>3</sup>	November 2000 – March 2002
North High Island System (NHIS)	April 2001 – September 2002
Stingray Pipeline System (Stingray)	April 2001 – September 2002
Viosca Knoll	April 2001 – March 2002

Figure 2

The total sales volumes and values are provided in Figure 3.

<sup>2</sup> The data presented for MOPS includes volumes for 30+ leases. For the time period August 2000 – December 2000, the volumes and values for 5 of these leases were included in the *Texas General Land Office/Minerals Management Service 8(g) Gas Royalty In Kind Pilot* issued in March 2004.

<sup>3</sup> This represents gas that was aggregated at the NGPL La. Pool from three systems – Pelican, NHIS, and Stingray.

System	Total Volumes (MMBtu)	Total Unadjusted Value	Total Value Adjusted for Fuel and Transportation
ANR	22,973,640	\$107,510,838	\$106,929,981
Bluewater (Columbia and Tennessee)	42,747,668	\$167,274,312	\$166,142,302
CTGS (All)	22,169,223	\$86,012,956	\$85,692,963
HIOS (Packages 1, 2, & 3)	34,412,716	\$104,828,965	\$99,975,856
MOPS	13,854,598	\$55,375,221	\$54,530,890
NGPL <sup>4</sup>	5,405,487	\$33,345,576	\$33,345,576
NHIS	20,854,697	\$65,424,808	\$62,997,817
Stingray	29,657,409	\$91,179,140	\$88,107,605
Viosca Knoll	16,954,823	\$52,508,260	\$52,367,657
<b>Gulf-Wide Pilot Totals</b>	<b>209,030,261</b>	<b>\$763,460,075</b>	<b>\$750,090,647</b>

Figure 3

### General Information on Pipeline Systems

Attachment 2 summarizes general information for each of the pipeline systems on which MMS sold RIK production during the time periods covered by this report.

### Base Load & Swing Prices

The RIK gas pricing mechanism has evolved over all of the pilot periods. Initially, the entire volume of gas was delivered to the purchaser with the value based on a first-of-month index price. Eventually the MMS began contracting for two bundles of RIK gas for a given contract. The first of these bundles was a daily fixed delivered volume – a “base load,” volume. The second bundle was for a variable volume of gas that would fluctuate daily – a “swing” volume. The base load contract volume is valued using the appropriate index in Platt’s Inside FERC’s Gas Market Report published on the first of the month (FOM index price). These indices, based on prices offered for sales during the previous month’s bid week, are published the first of every month and remain fixed for the month. The swing volumes are valued using the daily midpoint prices published in Platts Gas Daily (GDD index prices).

The advantages of selling some gas as base load and some gas on a swing basis include:

- Gas sold as base load guarantees specific revenues based on a FOM index price,
- Gas sold on a swing basis, at a GDD index price, allows for daily fluctuations in production.

### Imbalances

The primary purpose of the monitoring activities is to assure the proper payment is received for the RIK volumes. A two-pronged effort accomplishes this task. The first independently calculates the value and tracks receipt of payment for the RIK production. The second verifies the RIK volumes for which payment is received. The number and complexity of tracking documents depends on the type of contracts being monitored.

<sup>4</sup> Id.



The physical flow of OCS RIK gas can be typically described as follows: wellhead gas production flows through production facilities through a meter into an offshore pipeline to an onshore pool where the gas enters the complex transmission system for eventual distribution to end users throughout the United States. Some RIK contracts call for delivery of gas to the MMS at the onshore pool. Others call for delivery to the MMS at the offshore meter. Typically, the more times the gas changes custody, the more complex the tracking mechanisms.

### **Gas Available For Sale**

Lease operators are required to notify the MMS of the volumes expected to be available for sale no less than 8 days prior to the first day of the month in which the production will occur. These gas available for sale volumes (actual volumes) become the basis for the marketing efforts.

### **Base Load and Swing Volumes**

During the period of time that the MMS sold its RIK gas under aggregation contracts, the MMS was required to monitor two different types of imbalances – aggregator and pipeline.

### **Aggregator Imbalances**

Once the actual volumes were known, the volume to be sold as base load is determined. The difference between the actual volumes and the base load becomes the swing delivery volumes. The combination of the base load and swing volumes is the nominations (noms). In the early RIK sales, the MMS employed an aggregator. The aggregator's role was to accumulate volumes from the offshore metering points and deliver those volumes to the pooling point specified in the contract. The aggregator was also responsible for mitigating wide swings in gas balances. In return for performing these services, the aggregator received a percentage of the volume. As part of the contract, the aggregator agreed to assure that the volumes delivered out of the pool matched the noms the MMS had contracted to sell. The MMS monitored the actual volumes and determined the differences (plus or minus). The imbalance between the nominated volumes and the actual delivered volumes were cashed out at the end of the month. In the first RIK contracts, the MMS sold most or all of its gas as base load. Since the base load volumes were valued on a first of month price that did not change during the production period, the chances for significant amounts being due by one party to the other existed. The introduction of swing volumes that are valued on a daily index value basis mitigated but did not eliminate the potential. Once the MMS received authority to enter into transportation contracts, the need for an aggregator, and many complications inherent to balancing went away.

### **Pipeline Imbalances**

Pipeline imbalances occur when the actual deliveries out of a pool do not match the noms that the MMS has contracted to sell to its purchasers. The pipeline operator delivers the noms and keeps track of the differences (plus or minus) that either it owes the MMS or vice versa. Pipeline imbalances are a routine part of selling gas. The imbalance differences are valued under the transportation contract and are cashed out at the end of the month.

Further complicating the accounting process was the fact that adjustments to the delivered volumes occurred well past the end of the contract period. Electronic Bulletin Boards and other data sources must be routinely reviewed for changes.

## **Operator Imbalances**

In addition to the imbalances between the noms and deliveries, MMS must track and resolve the imbalances that occur at the lease/agreement. These imbalances result when the actual production from the lease that flows through the facility measurement point is greater or less than the amount anticipated by the operator during the month.

The operator is required to provide a lease imbalance statement to the MMS no later than 45 days after the month of production. Imbalances are to be made up by adjusting the deliveries for the month following the month when the imbalance statement is due. If imbalances exist at the cessation of the contract term, the imbalances are usually cashed out using the applicable first of month index.

Attachment 4 provides a gas balancing example from COPAS Bulletin No. 24 Revisions. The example directly applies to the MMS if one assumes that the MMS is a royalty interest owner and is taking the government's 1/6<sup>th</sup> royalty share in kind. The processes to assure that the correct volumes and any imbalances are properly accounted for may be complex but not beyond reasonable accounting methodologies.

## **Gas Processing**

MMS currently has gas processing agreements in place for all RIK gas that requires processing. The contracts are generally for periods of one year and generally include an evergreen clause at the end of the year. Those agreements are with the plants identified in Attachment 2 with each system moving MMS RIK gas. Generally, the contracts are percentage of liquids contracts. In this type of contract, the MMS retains a per cent of the liquids the plant extracts from the gas stream. The percentages are generally greater than 80 per cent. The price received for the liquids includes other costs (e.g. transportation, fractionation) incurred by the plant.

MMS offers to sell its processing rights in the Invitation for Offer for each sale. No companies had exercised this option for the analysis periods in this report. The MMS has recognized potential benefits which impact the economics of a given processing contract it negotiates. Moving gas on systems that are serviced by more than one gas plant provides some leverage in negotiations. Similarly, being able to bring additional gas to a plant can improve the bargaining position.

For most of the months during the analysis period, it was not economic to process RIK gas because of low liquids prices. However, there were many instances where the MMS had no choice but to process its gas and pay for the service in order to continue to be able to ship RIK gas on a system because the pipeline would not ship gas that exceeded a specified Btu threshold. An example of this type of requirement is included as Attachment 5. Companies paying royalties in value would be similarly impacted and experience the same service costs.

The ANR system provides an example of how the MMS can improve the revenues received from the sale of RIK gas. The ANR system is a free-pooling system and the gas moved on the system is sold at the same pool (for basically the same price) by all producers. Gas from the ANR system can be processed at either the Lowery or Eunice gas plants. Because the MMS RIK volumes are not locked into processing at a specific plant nor are they dedicated to a plant under life-of-lease contracts, the MMS is able negotiate shorter term contracts with the plant that offers the best revenue enhancement terms.

## **Sale Process**

Sales of RIK gas are typically for five month (November through March) or seven month (April – October) periods. These time periods correspond to the seasonal winter and summer demand periods. The MMS has issued contracts for periods of up to a year. Regardless of the length of the contract period, the sales process follows the same pattern.

### **Issue an Invitation for Offer (IFO)**

The IFO contains all pertinent information necessary to make a offer to purchase MMS RIK gas.

Items included in the IFO are:

- The pipelines on which volumes are being offered,
- The volumes being offered,
- The receipt points (pipeline meters) for those volumes,
- The leases behind the receipt points,
- The details of how to make an offer and on what basis the offer should be made,
- A copy of the offer sheet,
- How the MMS may negotiate the offers,
- The term of the contract,
- How transportation and scheduling of royalty gas should occur,
- How processing rights may be impacted,
- What the financial assurance requirements are for the offerers, and
- Other general contractual requirements.

### **Receipt and Acceptance of Offers**

Offers are generally due during the second week of the month prior to the month the contract begins. The date is flexible to allow for workload and other factors. The MMS may perform further negotiations with offerers when similar offers are received. Contracts are awarded on the day following the receipt of offers.

### **Financial Assurance**

As mentioned above, the IFO contains a section titled Pre-Qualification and Credit Requirements. The following generally summarizes the requirements outlined in this section.

- Offerors are required to pre-qualify by signing the base Gas Industry Standards Board (GISB) contract and providing detailed financial information to the MMS. MMS then issues an amount of unsecured credit based upon the creditworthiness of the offeror. The MMS requires a parent guaranty in situations where the offeror company is a different entity than the company that has pre-qualified.
- When the award exceeds the amount of credit issued by the MMS or in situations where MMS has suspended the approved line of credit, buyers will be required to provide secured financial assurance in the form of an Irrevocable Letter of Credit, bond, pre-payment, or other MMS –acceptable surety instrument.
- The financial assurance amount must be sufficient to cover the value of 60 days of deliveries of the estimated production of all royalty gas awarded, less the amount of credit issued by MMS.

- Significant and sustained increases in the value of royalty gas during the term of the contract may result in the requirement to increase the amount of financial assurance. If the creditworthiness, financial responsibility, or ability to perform become unsatisfactory to the MMS at any time during the term of this agreement, satisfactory assurances may be required as a condition to further performance under the agreement. An investment-grade rating by Standard and Poor's is required by MMS to maintain creditworthiness.

### **Daily/Monthly Monitoring Activities**

Monitoring activities assure the proper payment is received for the RIK volumes. A two-pronged effort accomplishes this task. The first calculates the value and tracks receipt of payment for the RIK production. The second verifies the RIK volumes for which payment is received.

The routine monthly cycle for the RIK pilot leases entails the following steps:

- Invoicing
- Payment Receipt
- Allocation of Payment
- Royalty Report (2014) Preparation
- Distribution of Funds
- Preparation of Interest Bills (As Necessary)

The above steps are carried out in the same manner as described in the Texas General Land Office/Minerals Management Service 8(g) Gas Royalty In-Kind Pilot - A Report.

### **MMS RIK/Payor RIV Price Analysis**

The MMS selected four pipeline systems – the Central Texas Gathering System, the North High Island System, the Stingray gathering system, and the Bluewater system (Tennessee and Columbia) – for the purposes of performing a royalty in value (RIV) analysis. These four systems accounted for approximately 55.2 percent of the total volumes and 53.7 percent of the total value of all gas sold during the pilot period being analyzed. It should be noted that the Bluewater system is one of the largest (central to eastern Gulf of Mexico) and most complex systems on which the MMS sells its gas in kind. The Stingray system is also a larger Gulf of Mexico gathering system. The CTGS and NHIS systems are relatively small systems in the western Gulf of Mexico on which the MMS has considerable experience. All pipelines transported gas - for which royalty was being paid in value - from a number of leases operated by many different operators. The remaining systems were not included in the analysis due to the limited number of leases on those systems that were reporting royalties in value. Because of these factors, these systems selected for analysis were deemed to provide representative values for both the gas taken in kind and the gas for which royalties were paid in value.

### **Process**

For all four systems the MMS compared the prices received by the MMS for its RIK gas with the prices received by payors reporting and paying royalties in value on these systems. An analysis of all royalty lines reported for these systems indicated that just three per cent of the reported royalties were attributable the sale of natural gas liquids. Primarily for purposes of simplification, to eliminate uncertainty due to the inclusion of processed gas/natural gas liquids reporting errors, and the relatively small royalty impact, only reporting lines related to unprocessed gas were used.

The following steps outline the process used in making the comparison mentioned above.

- 1) The MMS obtained property lists for the pipeline systems in the RIK pilot. Those lists identified the properties whose gas was being taken in kind and those that royalties were being paid in value (RIV).
- 2) In-value royalty lines for all properties and payors were extracted from the financial data base maintained by the MMS's Minerals Revenue Management program for the appropriate time periods.
- 3) The extracted royalty lines were "cleaned" to eliminate extraneous lines. Extraneous lines included pairs of lines with no impact on royalty payments (positive original lines and negative modified lines) and lines with unusable data that would not impact the results of the analysis (lines with minimal volumes or values).
- 4) All remaining RIV lines for a payor on a given system were sorted by month and year and a volume weight average price/MMBtu was calculated for each payor for each month/year.
- 5) For all pipeline systems, sales invoices issued by the MMS for RIK pilot gas were identified and summarized. Weight average RIK prices were calculated for the systems and months during the analysis period.
- 6) For the four systems for each month/year, payor volume weight average RIV prices and MMS volume weight average RIK prices were stratified (highest to lowest).<sup>5</sup>
- 7) The number of payors - and their respective royalty volumes - with prices greater and less than the MMS RIK price were identified. Some payors paid royalties in value for only one lease on the system. However, in many instances, the data for a payor reflected royalty payments on several leases on the gathering system.
- 8) For each system, a hypothetical revenue impact was calculated for each month. The MMS RIK price was multiplied by the royalty volume of each payor with prices greater than the MMS RIK price and then subtracted from the royalty value paid by that payor to determine a "potential increase" – the additional revenues MMS might have received had royalties not been taken in kind. A similar calculation was performed for all payors with prices less than the MMS RIK price – the reduction in revenues the MMS could have realized. The two calculated amounts for all payors were then summed for each month. An increase in revenues would occur when it would have been better for the MMS to have taken its production in value. A decrease occurs when it was better for the MMS to take its production in kind.

Attachments 7-10 provide a graphical comparison of the volume weight average price of those payors with prices greater than and less than the MMS RIK price for the four systems analyzed.

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<sup>5</sup> In many instances, a payor paid royalties in value on more than one lease on a pipeline system. In order to normalize (account for the relationship of price to volume) the prices received by the payor, a volume weight average price was calculated. For example: On Lease A, 1,000 MMBtu were sold at \$1.00/MMBtu; on Lease B, 10,000 MMBtu were sold at \$2.00/MMBtu; the arithmetic average price received by the payor would be \$1.50/MMBtu  $[(\$1.00 + \$2.00)/2]$ ; the volume weight average price would be \$1.91/MMBtu  $(\$21,000/11,000\text{MMBtu})$ .

## *Conclusions*

### **CTGS**

During the October 2000 through September 2002 period, RIV payor data was collected for approximately 22 payors each month. During the analysis period, 163 payors reported royalty payments with weight average prices greater than the MMS RIK price, while 368 payors reported royalties with weight average prices less than the MMS RIK price.

During the 24-month period, 34,356,925 MMBtu were included in the analysis. The MMS took 64.5 per cent of all analysis volumes in kind. 10.1 per cent of the volumes were sold at prices greater than the MMS RIK price while 25.4 per cent were sold at prices less than the MMS RIK price. These results are graphically illustrated in Attachment 11.

During the 24-month period, royalty (RIK and RIV) revenues worth \$130,488,527 were analyzed. The MMS collected 65.8 per cent of these revenues for its in-kind gas. 11.5 per cent of the revenues were associated with the RIV gas that was sold with a weight average price greater than the MMS RIK price, while 22.7 per cent was sold at a weight average price less than the MMS RIK price. These results are illustrated in Attachment 12.

Assuming that MMS RIK volumes had been distributed evenly to all payors on the CTGS system and had been valued similarly to the volumes and royalties reported in value, the MMS received approximately \$1.1 million or \$0.049/MMBtu more in revenue by taking royalties in kind rather than in value.

### **Bluewater**

During the April 2000 through September 2002 period, RIV payor data was collected for approximately 47 payors each month. During the analysis period, 527 payors reported royalty payments with weight average prices greater than the MMS RIK price, while 899 payors reported royalties with weight average prices less than the MMS RIK price.

During the 30-month period, 102,218,338 MMBtu were included in the analysis. The MMS took 41.8 per cent of all analysis volumes in kind. 22.7 per cent of the volumes were sold at prices greater than the MMS RIK price while 34.6 per cent were sold at prices less than the MMS RIK price. These results are illustrated in Attachment 11.

During the 30-month period, royalty (RIK and RIV) revenues worth \$397,939,641 were analyzed. The MMS collected 40.1 per cent of these revenues for its in-kind gas. 25.3 per cent of the revenues were associated with the RIV gas that was sold with a weight average price greater than the MMS RIK price, while 34.6 per cent was sold at a weight average price less than the MMS RIK price. These results are illustrated in Attachment 12.

Assuming that MMS RIK volumes had been distributed evenly to all payors on the Bluewater system and had been valued similarly to the volumes and royalties reported in value, the MMS received approximately \$2.9 million or \$0.067/MMBtu more in revenue by taking these royalties in kind rather than in value.

### **Stingray**

During the April 2001 through September 2002 period, RIV payor data was collected for approximately 10 payors each month. During the analysis period, 53 payors reported royalty payments with weight average prices greater than the MMS RIK price, while 135 payors reported royalties with weight average prices less than the MMS RIK price.

During the 18-month period, 37,183,794 MMBtu were included in the analysis. The MMS took 79.7 per cent of all analysis volumes in kind. 6.4 per cent of the volumes were sold at prices greater than the MMS RIK price while 13.9 per cent were sold at prices less than the MMS RIK price. These results are illustrated in Attachment 11.

During the 18-month period, royalty (RIK and RIV) revenues worth \$108,987,177 were analyzed. The MMS collected 79.4 per cent of these revenues for its in-kind gas. 6.5 per cent of the revenues were associated with the RIV gas that was sold with a weight average price greater than the MMS RIK price, while 13.1 per cent was sold at a weight average price less than the MMS RIK price. These results are illustrated in Attachment 12.

Assuming that MMS RIK volumes had been distributed evenly to all payors on the Stingray system and had been valued similarly to the volumes and royalties reported in value, the MMS received approximately \$192,000 or \$0.006/MMBtu more in revenue by taking these royalties in kind rather than in value.

### **North High Island System**

During the April 2001 through September 2002 period, RIV payor data was collected for approximately 12 payors each month. During the analysis period, 97 payors reported royalty payments with weight average prices greater than the MMS RIK price, while 118 payors reported royalties with weight average prices less than the MMS RIK price.

During the 18-month period, 36,341,379 MMBtu were included in the analysis. The MMS took 57.4 per cent of all analysis volumes in kind. 21.5 per cent of the volumes were sold at prices greater than the MMS RIK price while 21.1 per cent were sold at prices less than the MMS RIK price. These results are illustrated in Attachment 11.

During the 18-month period, royalty (RIK and RIV) revenues worth \$109,542,239 were analyzed. The MMS collected 57.6 per cent of these revenues for its in-kind gas. 21.3 per cent of the revenues were associated with the RIV gas that was sold with a weight average price greater than the MMS RIK price, while 21.1 per cent was sold at a weight average price less than the MMS RIK price. These results are illustrated in Attachment 12.

Assuming that MMS RIK volumes had been distributed evenly to all payors on the NHIS system and had been valued similarly to the volumes and royalties reported in value, the MMS received approximately \$710,000 or \$0.034/MMBtu less in revenue by taking these royalties in kind rather than in value.

The NHIS is the only analyzed system that the MMS did not calculate an increase in revenues. A review of the data in Attachment 10 indicates that there were extreme differences in prices in the October 2001-January 2002 time frame. In two months – November 2001 and January 2002 – 22 out of 23 in-value payors received higher prices than the MMS. If these two months were not included in the analysis, the theoretical net revenue loss of \$710,000 would be an increase of \$400,000.

## **Summary**

For the four systems for all analysis months, the MMS RIK price was greater than 1520 of the payor's weight average prices reported for royalties paid in value, and less than 840 payor's monthly weight average prices. These data are illustrated in Attachment 6. Additionally, the MMS received an estimated revenue uplift of approximately \$3.5 million or \$0.03/MMBtu.

The analysis provides a reasonable indication that the values received by the MMS RIK effort are clearly within the range of values received by royalty payors flowing gas through the same pipeline systems as the MMS RIK gas.

## **Transportation Analysis**

The physical transportation aspects for RIK gas movement are different for each system on which the MMS sells gas in kind. The specifics for each system are described in Attachment 2 under each pipeline system's summary. The MMS believes that it is able to reduce the costs of moving RIK gas to the sales point by having the ability to contract for the movement. The volume of gas that the MMS controls puts the MMS in a better bargaining position than if the volumes were contracted for in smaller bundles as could be the case if royalties are paid in value by individual payors.

In order to estimate a revenue impact the MMS collected transportation data for the in-value payors on the CTGS, Bluewater, Stingray, and NHIS systems (there were insufficient in-value payors on the other systems to perform this analysis). Only the data that was identified as a transportation allowance was used. Many payors either do not claim transportation allowances or report their in-value royalty "net" of the allowance deductions. For these same systems, the MMS collected transportation deduction data from the RIK invoices.

Average monthly transportation rates were determined and a comparison was made. An estimated savings/loss in revenue was calculated by applying the difference between the RIV transportation rates and the RIK invoice rates to the RIK volumes sold in each month.

The following figures show the transportation rates for each of these pipeline systems. The lower transportation rate results in greater net royalty revenue for the public, since transportation costs are deducted from sales proceeds before calculating the royalty due.



The average number of in-value payors reporting transportation allowances for the CTGS system was eleven.

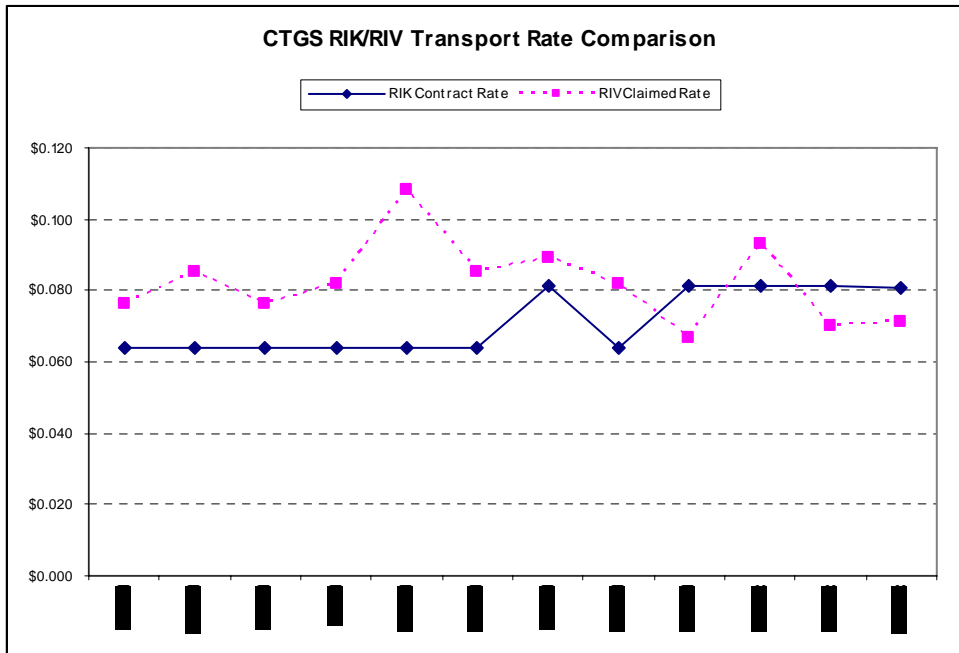


Figure 4

The average number of in-value payors reporting transportation allowances for the Bluewater system was twenty-one.

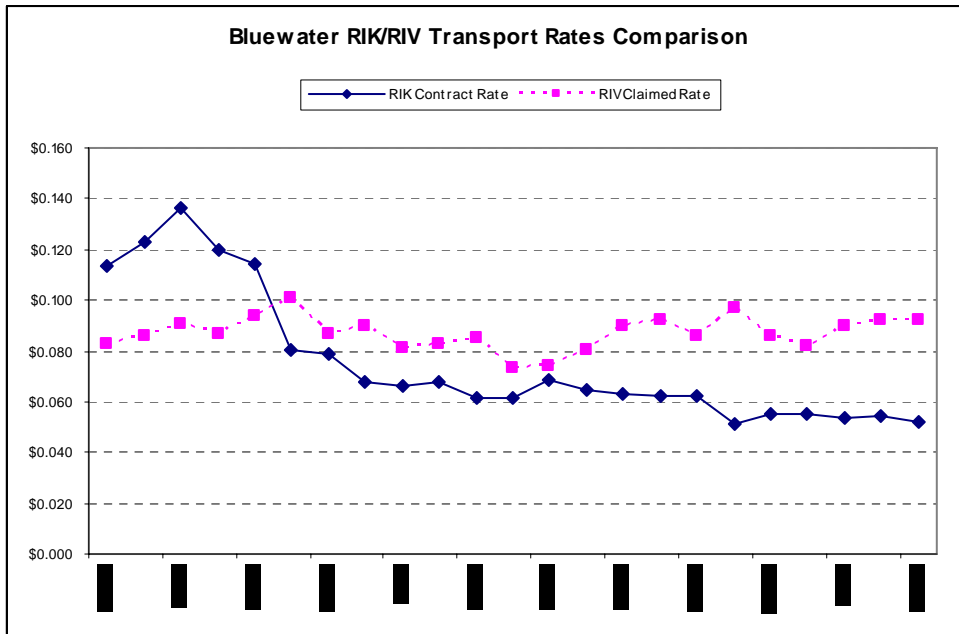


Figure 5

The average number of in-value payors reporting transportation allowances for the Stingray system was seven.

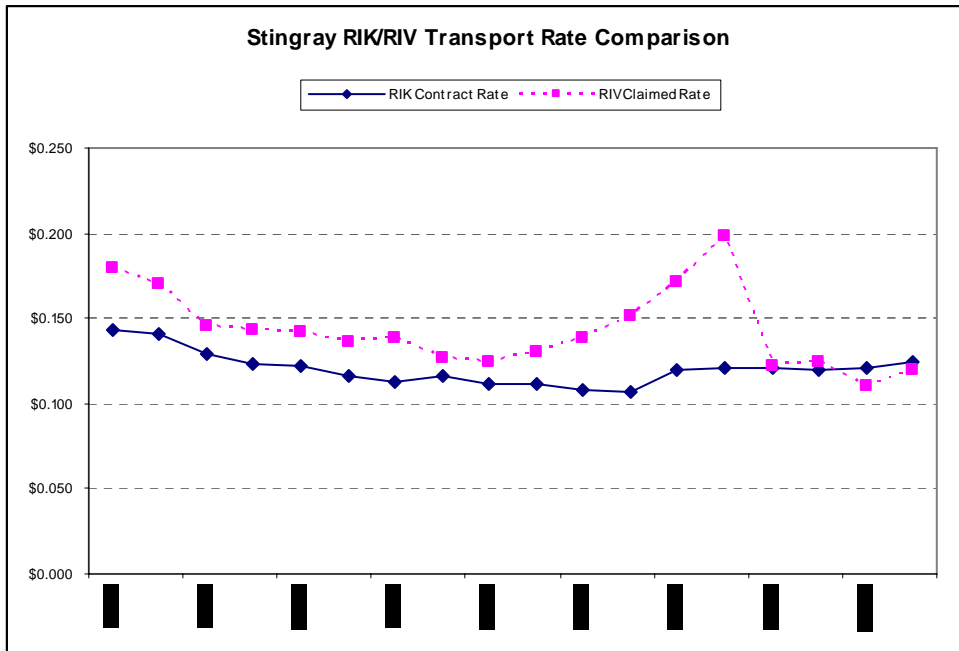


Figure 6

The average number of in-value payors reporting transportation allowances for the NHIS system was six. The NHIS was the only system analyzed for which the RIK transport rate consistently exceeded the claimed in-value transport rate (see Figure 7).

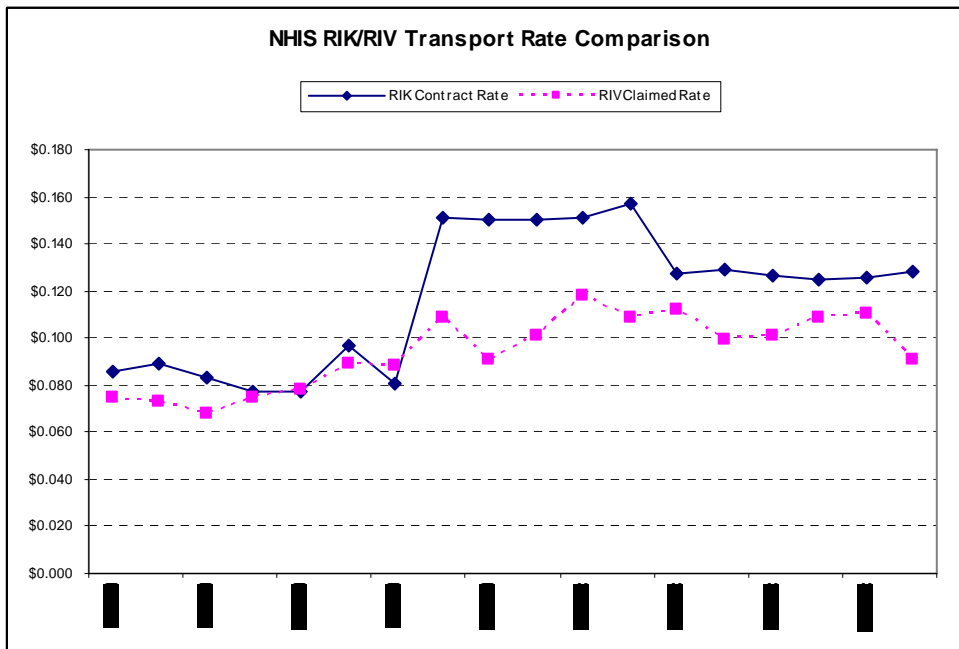


Figure 7

In November 2001, based on an internal economic analysis, the MMS ceased selling and transporting its gas in two bundles (base load and swing) at the Transco Zone 2 pooling point and began selling all of its gas as swing at the Transco Zone 3 pooling point which is further downstream. An analysis comparing the revenue that MMS received selling its production downstream at the Transco Zone 3 pooling point with what the MMS would have received had it continued to sell its gas at the Transco Zone 2 pooling point confirms that the MMS enhanced revenues by approximately \$0.065/MMBtu which more than covered the increased cost of transportation.

For all four systems, the estimated increase in revenue –savings over what could have been claimed in value – was \$561,900 or \$0.008/MMBtu (approximately 1¢ per MMBtu).

### Comparison to Published Indices

The MMS gas RIK contract price (for the base and swing loads) are based on published index prices. The base load volumes are valued using the FOM index price published in Platts Inside FERC's Gas Market Report. The prices in this publication reflect the deals made for base load volumes of gas during the previous month's bid week. The swing volumes are valued using Platts Gas Daily published prices. On most systems, the gas flows into a pool where more than one index value is published. The contracts signed by the MMS's RIK group referenced an index point from one of these publications and included an adjustment (Index Value +/- \$0.xx) agreed upon in the negotiation of the sale. The adjustment is related to the current market conditions and the negotiators perception of what the market will be doing during the future months of the contract.

For purposes of a general comparison of the RIK contract prices for the base load and swing volumes to the appropriate index values, the RIK invoiced amount for the RIK base load and swing volumes was divided by those volumes to determine a unit price for the base load and swing volumes. These data were then compared to the appropriate first of month index prices for the base load and the average of the daily midpoint prices for the swing volumes.

Since the RIK contracts are based on an index price, one would expect the unit value received by the MMS to be similar to the index (or average of indices) appropriate for that system. An estimated increase (RIK price greater than index average) or decrease (RIK price less than index average) was calculated for both the base load using FOM index prices and the swing volumes using GDD index prices. For all systems for all analysis periods, the RIK gas had a value of \$763 million. For the same periods, the MMS RIK value exceeded the index average based value by approximately \$313,000 or .04 percent. The summary by system is provided in Figure 8.

System	Time period	Total Volumes		Revenue Increase/(Decrease)		
		Base Load	Swing	Base Load	Swing	Net
ANR	11/00-09/02	17,543,417	5,430,223	\$45,052	\$1,171,042	\$1,216,094
Bluewater	04/00-09/02	30,939,420	11,808,248	(\$79,510)	(\$34,632)	(\$114,142)
CTGS	10/00-09/02	16,790,839	5,378,384	(\$30,354)	\$34,431	\$4,076
HIOS	04/01-09/02	25,121,593	9,291,123	(\$906,522)	(\$85,981)	(\$992,504)
MOPS	08/00-09/02	10,061,521	3,793,077	(\$172,822)	(\$239,745)	(\$412,567)
NHIS	04/01-09/02	6,339,333	14,515,371	\$79,242	\$522,820	\$602,062
Stingray	04/01-09/02	20,393,204	9,264,205	\$196,029	\$38,271	\$234,299
Viosca Knoll	04/01-03/02	10,688,203	6,266,620	(\$160,940)	(\$63,212)	(\$224,152)
<b>TOTALS</b>		<b>137,877,530</b>	<b>65,747,251</b>	<b>(\$1,029,826)</b>	<b>\$1,342,993</b>	<b>\$313,166</b>

Figure 8

Although some systems show net revenue increases and others show decreases, analysis of the monthly data for a specific pipeline system yields no discernable pattern. Generally, the calculated increases and decreases for the base load volumes become less significant the longer the volumes on a system are taken in kind. However, the same statement does not appear to apply for the swing volumes. The comparison of the RIK base load and swing contract prices to the appropriate published indices are graphically provided in Attachment 13. Graphs have been provided for all but the NGPL system which is not included due to the limited amount of data.

As indicated by the small increase (0.04%), the MMS RIK values are, as expected, comparable to the appropriate published index values.

### **Administrative Analysis**

Drawing any conclusions about the effect on MMS administrative costs are difficult. There appear to be potential benefits from simplified reporting and from the reduction in audits and associated appeals and litigation related to valuation issues. However, MMS performs functions for RIK that it wouldn't otherwise perform, such as the preparation and conduct of gas sales and settling imbalances. Many of the RIK processes have become routine. The MMS contracted with Lukens Energy who developed a Five Year Royalty In-Kind Business Plan that identifies monitoring and analysis methodologies. Additionally, the reengineered processes for royalties paid in value were not in place for the analysis period covered in this report. For this time period, MMS cannot quantify the relative costs of these processes for this time period.

Determining the effect on administration costs is not within the scope of this report. At the time these projects were conducted, MMS did not have adequate means to systematically estimate administrative cost savings. Since that time, MMS has instituted an Activity Based Costing system that is being refined to provide a more accurate picture of the costs associated with RIK and RIV. Data from this system will contribute to the RIK performance metrics that will be used in future reports covering ongoing RIK activities.

However, a broad measure of the administrative costs of the RIK and royalty in value efforts was calculated. For Fiscal Year 2001, total offshore volumes of gas and oil for both in value payments and in kind sales were gathered. Barrels of Oil Equivalent (BOE) were then calculated. Additionally, the program costs for MMS' Offshore Compliance and Asset Management (OFFCAM) and Royalty In Kind programs were determined. A cost per BOE was estimated for the OFFCAM and RIK programs. The estimated program costs per BOE are displayed in Figure 9. These costs are a rough approximation of administrative costs.

<b>FY 2001 – Offshore Only</b>					
	<b>Royalty Gas (MMBtu)</b>	<b>Royalty Oil (Barrels)</b>	<b>Barrels Oil Equivalent (BOE)</b>	<b>Program Costs</b>	<b>\$/BOE</b>
Offshore Compliance & Asset Management (In Value)	773,471,831	64,969,452	203,089,422	\$12,579,333	\$0.062
Royalty In Kind	117,274,938	30,192,683	51,134,636	\$1,873,728	\$0.037

Figure 9

## **Early Reporting Benefit**

Royalty payment requirements are part of the RIK contract. Currently, all RIK payments are generally received 5 days earlier than required under the in-value regulations averaged over a significant length of time. Using the MMS' standard late payment interest rate and the monthly sales for all pilots, the MMS estimates \$715,000 was realized by selling gas production in kind during the analysis period.

## **Conclusions/Lessons Learned – Greater GOM Pilot**

The Greater GOM Pilot provided many successes. It proved that in the right circumstances, the MMS could take its share of GOM production and market it. The MMS learned the advantages of marketing a share of its gas at a monthly fixed price and a share of its gas using a daily price indicator. The MMS became very knowledgeable concerning the different types of transportation pipelines. The MMS learned the value of having significant volumes of gas to move on one system or another when available. The MMS continued to learn how to market and sell increasingly larger volumes of the government's gas. The MMS can approximate and generally exceed the value paid for similarly situated gas on which the royalties are being paid in value. The MMS recognized the need to develop routine policies and procedures which the Five Year Business Plan addresses.

**TASK ORDER**  
**Task Order #: TO-00-001**  
**UNITED STATES GENERAL SERVICES ADMINISTRATION**  
**DEPARTMENT OF THE INTERIOR'S MINERALS MANAGEMENT SERVICE**  
**INTERAGENCY AGREEMENT NO. P00-99-IA-0009**

POINT OF DELIVERY: Johnson Bayou ANR Meter 40464 and NGPL LA Pool

ESTIMATED DAILY GAS VOLUME: 200,000 DTH (Decatherms)

INDEX: ANR LA and NGPL LA

START DATE: December 1, 1999

1. Under this order, the GSA National Center for Utilities Management, or its agent:
  - a. Will accept royalty gas at any of the delivery point for re-delivery;
  - b. Will accept full responsibility to take 100% of the gas delivered and transferred to them at the delivery point, and any and all penalties and consequences associated with any failure to effectively take delivery of royalty gas.
  - c. Will reimburse MMS for all gas made available to GSA or its agent at the delivery point at the price index applicable to that delivery point. Payment will be made consistent with the provision of paragraph 1.5 of the basic Interagency Agreement.
  - d. Will share and reimburse to MMS, on a 50/50 basis any increase in value realized above the appropriate index (see table below) for royalty gas transferred to GSA that is disposed of in other markets. This value will be computed as the difference between the appropriate index price and the adjusted spot market sale price (spot market sale price less a differential of \$.005).
  - e. Any imbalances at the delivery point arising from the difference between the delivered amount and the actual amount produced at the wellhead, will be satisfied monthly on a cash basis with MMS's contractor at the first of the month index price for the month in which the imbalance occurred. This method may change for deliveries of gas starting April 1, subject to the agreement of MMS and GSA. Any payments made by MMS's contractor for production produced but not delivered to GSA will be remitted to MMS within 7 days of its receipt. Any payment made to MMS's contractor for volumes delivered in excess of the amount determined by gas produced at the wellhead shall be remitted to the MMS contractor within 10 days after the monthly imbalance report is received.
  - f. GSA will provide to MMS all reports specified in paragraphs 2.1.B of the Interagency Agreement, and provide as necessary source documentation supporting the monthly statements. In addition, GSA grants MMS the right to review all supporting documentation used for reporting and reimbursement to MMS. Copies of the monthly reports should go to:

Michael Dei-Colle, Herndon, VA  
 John Russo, Lakewood, CO

2. Under this order, MMS will:
  - a. Make available to GSA or its agent, firm daily volumes of natural gas at the delivery point.
  - b. Assure that the volume of gas associated with the December exchange auction will be available to GSA for a minimum of 11 months, subject to availability of the gas in the pilot program.
  - c. Be responsible for all balancing and transportation prior to delivery point;

ACCEPTED: The foregoing shall be effective upon the return of the fully executed original Authorization by all three Parties.

<p><b>Minerals Management Service</b></p> <p><i>Michael Dei-Colle</i></p> <p>Michael Dei-Colle</p> <hr/> <p>Contracting Officer</p> <hr/> <p>Date</p>	<p><b>General Services Administration</b></p> <p><i>Linda L. Collins</i></p> <p>Linda L. Collins</p> <hr/> <p>Contracting Officer</p> <p>11-3-99</p> <hr/> <p>Date</p>	<p><b>Contractor</b></p> <p><i>Lori Johnson</i></p> <p>Lori Johnson</p> <hr/> <p>President</p> <p>11/2/99</p> <hr/> <p>Date</p>
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**Modification #1**  
**Task Order #: TO-00-001**  
**United States General Services Administration**  
**Department of the Interior**  
 Interagency Agreement No. P00-99-IA-0009

The provisions of this task order are modified, effective January 1, 2000, as follows:

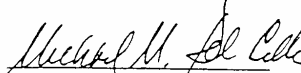
1. Under this order, the GSA National Center for Utilities Management, or its agent:
  - a. Will accept royalty gas at any of the delivery points for re-delivery;
  - b. Will accept full responsibility to take 100% of the gas delivered and transferred to them at the delivery point, and any and all penalties and consequences associated with any failure to effectively take delivery of royalty gas.
  - c. Will reimburse MMS at the first of the month index applicable for the delivery point for all gas made available to GSA or its agent stated as a firm volume.
  - d. Will reimburse MMS at the Gas Daily – Midpoint index (*less \$.005*) applicable for the date of delivery and the delivery point for all gas made available to GSA or its agent stated as a swing volume.
  - e. Will share and reimburse to MMS, on a 50/50 basis any increase in value realized above the appropriate index specified in paragraphs c. and d. above, for royalty gas transferred to GSA that is disposed of in other non-Federal markets. This value will be computed as the difference between the appropriate index price and the adjusted market sale price.
  - f. Will make payment consistent with the provision of paragraph 1.5 of the basic Interagency Agreement.
  - g. Will direct a portion of the payment to MMS' contractor, at MMS' discretion, to pay for any imbalances caused by additional gas being delivered to GSA or its agent in excess of the amount of gas produced (adjusted for the exchange factor). The payment will be based on the appropriate Gas Daily – Midpoint index applicable for the date of the imbalance.
  - h. Will provide via e-mail to MMS daily information supporting the daily receipts and sales of gas provided under this order. In addition, GSA grants MMS the right to review all supporting documentation used for reporting and reimbursement to MMS.
  
2. Under this order, the MMS:
  - a. Will make available to GSA or its agent, daily volumes of natural gas at the delivery point.
  - b. Will provide GSA or its agent first of the month production availability amounts reflecting both firm and swing service levels *within 8 to 10 working days before the end of the month.*
  - c. Will advise GSA or its agent of intramonth adjustments needed to the first of the month nominations as circumstances warrant. These adjustments will be made to the delivery amounts noted as swing volumes. Intraday adjustments in volumes will not be allowed.
  - d. Will assure that production from all acceptable exchange bids for the pipelines associated with the October, 1999 exchange auction will be reserved for GSA for an 11 month period (gas to be taken starting December, 1999 and ending November 2000). MMS may reserve additional pipeline resources to the offered October exchange package as the opportunities present themselves.
  - e. Be responsible for all balancing and transportation prior to the delivery point.
  
3. Declarations of force majeure or force pipeline cuts accepted by the MMS relieve the MMS contractors of the legal responsibility to support the firm delivery of gas to GSA or its agent in proportion to the lost production. Nonetheless, the MMS, working with its contractors, will make reasonable efforts to support firm delivery through management of the imbalance accounts maintained with the contractors.


ACCEPTED: The foregoing shall be effective January 1, 2000.


Minerals Management Service

General Services Administration

Contractor

  
 Michael Del-Colle  
 Contracting Officer

  
 Linda L. Collins  
 Contracting Officer

  
 Lori Johnson  
 President

Date: February 1, 2000

Date: February 22, 2000

Date: 2-14-00

## **Pipeline Systems in the Gulf-Wide Gas RIK Pilot**

The following alphabetical listing describes the nine pipeline systems on which MMS sold gas in kind during the period covered by this report.

### **ANR Nearshore Pipeline System**

The ANR Nearshore Pipeline System (ANR) is operated by El Paso. The MMS sold gas from eight properties from April 2001 through September 2002. Five of the properties are sold at the lease and transportation is not a component of the offer. The other three properties flow on a gathering system operated by Texas Gas and deliver into the ANR system at WC 167. Transportation is negotiated by the purchaser and the MMS reimburses them for the charges. Tiger Natural Gas purchased the gas for the April – October 2001 time frame and Dynegy Marketing purchased the gas for the November 2001 – March 2002 period. Both sales were based on the ANR indices as published in Platt's Inside FERC's Gas Market Report and *Gas Daily*.

The gas from the ANR system may be processed at either the Lowry or Eunice Gas Plants where there is good competition.

### **Bluewater Pipeline System (Tennessee and Columbia)**

The Bluewater Pipeline System (Bluewater) has two owners – Tennessee Gas Pipeline Company (TGP) and Columbia Gulf Transmission Company (CGT). The flow of RIK gas on the Bluewater system is complicated due to the physical nature of the system. The Bluewater system is not unlike a “U” that connects to the Louisiana coast at two separate points. At the approximate bottom of the “U”, there is a “null” point at which gas may flow either east or west. On the eastern leg of the system, the MMS sells gas from fifteen properties on TGP's capacity in the system. All of the properties that flow on TGP's capacity flow on a TGP lateral line and are captive to TGP and have free pooling. The MMS also sells gas from properties on CGT's capacity on the eastern leg of the Bluewater system. Some of the properties move on CGT laterals and are captive to CGT and their rates. Other properties move on laterals that are not owned by either CGT or TGP. The MMS has negotiated a reduced transportation rate for some of these properties which are sold into the Columbia pool. An example of an Interruptible Transportation Discounted Rate Agreement is included as Attachment 3.

The TGP sales for the analysis period were based on the Platt's Inside FERC's Gas Market Report Tennessee Gas Pipeline Co. La. & Offshore (zone 1) index for base volumes and *Gas Daily* Tennessee 500 leg index for swing volumes. The CGT sales for the analysis period were based on the Platt's Inside FERC's Gas Market Report Columbia Gulf Transmission Co. Louisiana index for base volumes and *Gas Daily* Columbia index (under Louisiana-Onshore South) for swing volumes.



All of the TGP properties on the eastern side of the Bluewater system flow through Dynegey's Yscloskey Gas Processing Plant (Yscloskey). TGP required processing for any gas with a Btu greater than 1050. They later changed the requirement to any property with a dew point greater than 30 which affected thirteen of the fifteen properties. The MMS was required to process gas at Yscloskey even though for much of the period, the economics were unfavorable. Due to increasing liquids prices, the economic trend appeared to improve towards the end of the analysis period.

The CGT properties are located on the west side of the Bluewater system. The gas on the CGT operated part of the Bluewater system flow to the Bluewater Gas Plant. CGT had similar gas processing requirements as TGP; however, the MMS was never required to process its gas since the volume of owner's gas was sufficient to lower the tailgate gas quality to a level lower than the CGT requirement.

### **Central Texas Gathering System**

The Central Texas Gathering System (CTGS) is owned by a group of companies (Transco, Tennessee Gas Pipeline Co., Columbia Gulf, ANR, and Northern Natural Gas) that built the pipeline. Ownership is based on their share of investment. Transco (Williams Field Services) operates the system. There are seven market outlets for the gas on the CTGS system (Transco, Tennessee, NGPL, Midcon, Channel, Valero, and Dow).

The MMS sold gas in two packages for the analysis period (April 2001 – September 2002). The prices for Package 1 (approximately 21,000 MMBtu/day) were based on Platt's *Inside FERC's Gas Market Report* Tennessee Texas index for base volumes and *Gas Daily* Tennessee Corpus Christi for swing volumes. The prices for Package 2 (approximately 15,000 MMBtu/day) were based on Platt's *Inside FERC's Gas Market Report* Transco Zone 1 index for base volumes and *Gas Daily* Transco Station 30 for swing volumes. By using two different indices, the impacts of any volatility at one of the pricing points could be mitigated.

During the analysis period, the system operator applied to the FERC for an increased tariff. Since the winning bidder deducts its costs of transportation – even proposed increases – MMS monitors the progression of the tariff increase request and assures proper reimbursement should the full increase not be approved.

### **High Island Offshore System**

The High Island Offshore Pipeline System (HIOS) is operated by El Paso. MMS sold gas from forty properties during the April – October 2001 time frame. The number of properties increased to forty-two for the subsequent five-month sale period. Gas from the system is gathered at WC167. From there, it can move on three pipelines into different pools: the ANR (La) pool, the Tennessee 800 leg pool, the NGPL pool, or the Transco Station 45 pool.

Three packages were contracted during the April – October 2001 period. MMS reduced the number of packages to two for the November 2001 – September 2002 period. The volumes for sale were initially estimated at approximately 80,000 MMBtu/day from 40 meter points. These volumes declined to approximately 59,000 MMBtu/day by the end of the first sale period and remained fairly constant for the second sale period. The sales for both periods were based on the ANR indices as published in Platt's Inside FERC's Gas Market Report and Gas Daily. Price terms vary by package because one of the packages can only access the ANR pipeline and the other two are not encumbered by this requirement. On these two systems, the transportation is reimbursed based on the tariff rate for that pipeline.

Since the gas from the HIOS system was sold into the ANR (La) pool, it may be processed at either the Lowry or Eunice Gas Plants where there is good competition. During the first sale period, the RIK gas on the HIOS system was required by contract to be processed by the pipeline even though the processing economics were negative for much of the sale period. During the second sale period, MMS elected to have all of its gas processed at the Lowry gas Plant.

MMS periodically adds “in-fill” properties to this system, and noted that a significant volume could be added to this system with the inclusion of the Diana Hoover deep water property. The Diana Hoover volumes were included in the RIK pilot effective November 2002.

#### **North High Island Pipeline System**

The North High Island Pipeline System (NHIS) is owned by Transco.

MMS sold gas (approximately 40,000 MMBtu/day) from ten properties during the April 2001 - September 2002 time frame. The prices were based on Platt's Inside FERC's Gas Market Report Transco Zone 1 index for base load volumes and Gas Daily Transco Station 45 (Station 65) for swing volumes.

The gas on the NHIS system is captive to the Transco system and is moved to the Station 45/Zone 2 pool or Station 65/Zone 3 pool. The MMS reimbursed the purchaser for their transportation costs. MMS investigated the option of moving its gas further downstream to the Station 65/Zone 3 pool where prices are higher. The spread between Station 45 and Station 65 must exceed the cost of the additional transportation in order for the economics to be beneficial. Analysis justified the additional movement to the downstream pooling point.

The NHIS gas is captive to the Cameron Meadows Gas Plant owned by Williams Field Services (WFS) – a Transco affiliate. All of MMS's RIK gas did not meet the quality threshold established by Transco and was therefore processed during the sale period. In two months, WFS did provide MMS the option of electing to process or not. Based upon the economics in each month, MMS processed one time and not the other.

**Stingray Pipeline System**

The Stingray Pipeline System (Stingray) was initially owned by El Paso; however, El Paso sold the system to Shell Gas Transmission effective August 1, 2001. MMS sells gas from 25 properties on the Stingray system. There were two sales for seven month and five month periods. This follows the standard schedule of sales. The seven month period is for the summer season from April through October while the five month period is for the winter season from November through March.

The MMS initially awarded the contract for the November through March time frame to Enron North America Upstream Company but because of their deteriorating financial condition, the MMS revoked the contract and resold the Stingray volumes.

Gas from the Stingray system may be processed at either the Barracuda Plant or the Stingray Plant. The gas on the Stingray system is generally very lean and not processed. The MMS did enter a processing agreement with Dynegy during the November – March contract period that could be extended for an additional seven months. MMS determined that it was not economical to process the gas in November and December 2001, or in January 2002.

**Viosca Knoll Gathering System**

RIK gas from eight properties in the Viosca Knoll area moves on the Transco Pipeline to the Williams Mobile Bay Plant.

The MMS contracted to sell Viosca Knoll RIK gas for a twelve month period from April 2001 – March 2002. The sales (approximately 54,000 MMBtu/day) were based on Platt's Inside FERC's Gas Market Report Transcontinental Gas Pipe Line Corp. Mississippi, Alabama index for base volumes and Gas Daily Transco Station 85 index for swing volumes. The price provisions included adjustments for transportation and associated fuel charges. Williams Energy Marketing and Trade (Williams) bought the gas at the plant.

Since April 2002, the Viosca Knoll sales have been included in the Tennessee summary because the gas is moved on the Tennessee pipeline where it is processed at the Yscloskey gas plant.

**INTERRUPTIBLE TRANSPORTATION  
DISCOUNTED RATE AGREEMENT**

THIS AGREEMENT, made and entered into this 21st day of February 2001, by and between ("Transporter") and UNITED STATES MINERALS MANAGEMENT SERVICE ("Shipper").

WITNESSETH: That in consideration of the mutual covenants herein contained, the parties hereto agree as follows:

Section 1. Service to be Rendered. Transporter shall perform and Shipper shall receive the service in accordance with the provisions of the effective ITS-2 Rate Schedule and applicable General Terms and Conditions of Transporter's FERC Gas Tariff, Second Revised Volume No. 1 (Tariff), on file with the Federal Energy Regulatory Commission (Commission), as the same may be amended or superseded in accordance with the rules and regulations of the Commission herein contained. The maximum obligations of Transporter to deliver gas hereunder to or for Shipper, the designation of the points of delivery at which Transporter shall deliver or cause gas to be delivered to or for Shipper, and the points of receipt at which Transporter shall deliver or cause gas to be delivered, are specified in Appendix A, as the same may be amended from time to time by agreement between Shipper and Transporter, or in accordance with the rules and regulations of the Commission. Service hereunder shall be provided subject to the provisions of Part 284.223 of Subpart G of the Commission's Regulations.

Section 2. Term. Service under this Agreement shall commence as of April 1, 2001 and shall continue in full force and effect for a term of one (1) year. Shipper and Transporter agree to avail themselves of the Commission's pre-granted abandonment authority upon termination of this Agreement, subject to any right of first refusal Shipper may have under the Commission's Regulations and Transporter's Tariff.

Section 3. Rates. Shipper agrees, in exchange for the discounted transportation rate described herein, to commit all of its share of natural gas production taken in kind as part of the Mineral Management Service Royalty in Kind Program from the following blocks, offshore Louisiana,

during the term of this Agreement, to be transported on Transporter's \_\_\_\_\_ under this agreement. Transporter agrees to transport gas received at any of the receipt points below under an ITS-2 Agreement and deliver to \_\_\_\_\_

This rate shall be inclusive of the Annual Charge Adjustment (ACA) charge which charge shall not be discounted. In addition Shipper shall provide, in kind, Retainage as specified in the Tariff.

IT Transport Agreement Redacted.max

Receipt Points

Meters

Section 4. Notices. Notices to Transporter under this Agreement shall be addressed to it at \_\_\_\_\_ notice to Shipper shall be addressed to it at MS 330G5, 12600 W. Colfax Ave., Golden Hill Suite C-100, Lakewood Co 80215-3735, Attention: Mike DeBerard until changed by either party by written notice.

Section 5. Superseded Agreements. This Service Agreement supersedes and cancels, as of the effective date hereof, the following contracts: Non-Applicable.

Section 6. Confidentiality. The provisions of this Agreement shall be deemed confidential and may not be disclosed by the parties, their agents or assigns. No other disclosures will be permitted except upon written consent of the other party unless disclosure is required by law (e.g.: in accordance with the reporting requirement directed by the FERC).

**UNITED STATES MINERALS  
MANAGEMENT SERVICE**

By Michael H. DeLoe  
Its Business Development Chief  
Title 2/23/2001

By \_\_\_\_\_  
Its \_\_\_\_\_  
Title \_\_\_\_\_

Appendix A to Service Agreement No. \_\_\_\_\_  
Under Rate Schedule ITS-2  
between  
and U.S. Minerals Management Service (Shipper)

Transportation Quantity 35,000 Dth/day

The Master List of Interconnects (MLI) as defined in Section 1 of the General Terms and Conditions is incorporated herein by reference for purposes of listing valid interruptible receipt points and delivery points. However, the discounted transportation rate applies only to the Points of Receipt and Point of Delivery indicated in Section 3 of this Agreement.

**UNITED STATES MINERALS  
MANAGEMENT SERVICE**

By Michael H. Del. Cole

Its Bureau Procurement Chief

Date 2/23/2001

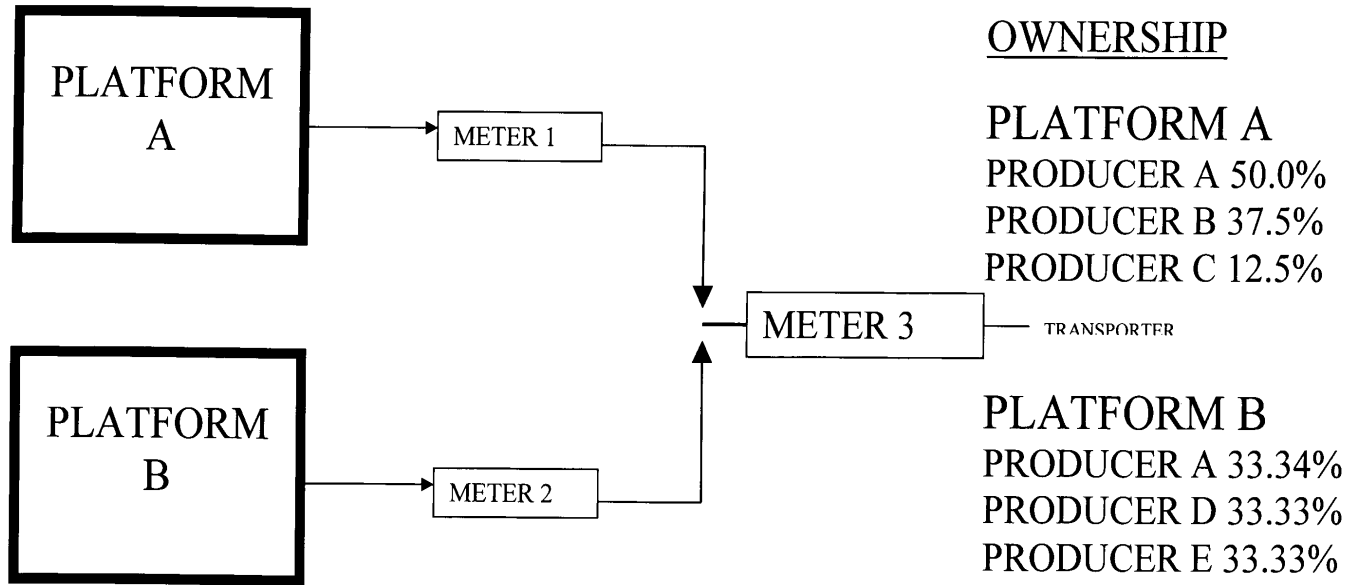
By \_\_\_\_\_

Its \_\_\_\_\_

Date \_\_\_\_\_

# GAS BALANCING/ALLOCATION ILLUSTRATION

Illustrations 1.2



**GAS BALANCING/ALLOCATION ILLUSTRATION  
FACTS/ASSUMPTIONS  
BALANCE BEHIND THE METER**

**For Illustration 1.2 (nomination by platform)**

- 1) Platform A is owned by Producer A- 50%, B- 37.5% C- 12.5%  
MMS has a .1667 royalty interest in the total platform (1/6 from each producer)
- 2) Platform B is owned by Producer A- 33.34%, D- 33.33%, E- 33.33%  
MMS has a .1667 royalty interest in the total platform (1/6 from each producer)
- 3) Platform A flows through allocation meter 1 whose volume equals 356,364
- 4) Platform B flows through allocation meter 2 whose volume equals 203,636
- 5) Allocation meters 1 and 2 flow through meter 3, which is the transporter's receipt point (custody transfer) meter and Facility Measurement Point (FMP). (multiple unrelated owners behind the meter)
- 6) Each producer's customer takes title to the gas at meter 3; therefore, the customers are the shippers.
- 7) Nominations equal:

<u>Platform</u>	<u>PROCUCER</u>	<u>NOMINATION</u>
A	A	320,000
A	B	0
A	C	80,000
B	A	33,340
B	D	33,330
B	E	33,330
TOTAL A &B	TOTAL	500,000

- 8) Actual deliveries to the transporter at meter 3 equaled 550,000.
- 9) Based on the total of meter 3 and allocated based on meter 1 and 2, lease available for delivery was:

<u>Platform</u>	<u>Meter</u>	<u>Volume</u>	<u>Percent of</u>	<u>Allocation of Meter 3</u>
A	1	356,364	063.64	350,000
B	2	203,636	036.36	200,000
Total	Total	560,000	100.00	550,000

- 10) Confirmed nominations received by shipper at meter 3. Used as the basis (pro-rata) for allocating meter 3 to the shippers (and producers of Platforms A and B).



**PRODUCER/PRODUCER GAS IMBALANCE STATEMENT  
FOR THE MONTH OF: March 2000**

Operator (Preparer) Name:	<u>Producer A</u>	Name of Preparer:	<u>Jane Doe</u>
Facility Name:	<u>Platform A</u>	Phone Number:	<u>(713) xxx-xxxx</u>
Facility Indicator:	<u>Lease</u>	Balancing Units:	<u>MMBTU</u>
Reservoir Name:	<u>XYZ</u>	Pressure Base:	<u>14.73</u>
Location:	<u>Block xxx OCS</u>	Wet/Dry Basis:	<u>Dry</u>
Date Prepared:	<u>June 15, 2000</u>		

(13) Transporter	(14) Operator/ Ownerr	W.I. % (15)	Current (16) Month Entitlement	(17) Production Delivery	(18) Est/ Act	Current (19) Month Imbalance	(20) Cumulative Imbalance
Pipeline X	Producer A	.5000	175,000	262,000	Act.	87,000	87,000
	Producer B	.3750	131,250	0	Act.	(131,250)	(131,250)
	Producer C	.1250	43,750	88,000	Act.	44,250	44,250
Total Fuel & Flare Deliveries		1.0000	350,000	350,000		0	0
Grand Total All Transporters			350,100	350,100		0	0

Owner Imbalance Summary

Operator/ Producer (14)	Prior (23) Cumulative	Current Month (24)	Prior Period Adjustments (25)	Cumulative (26)
Producer A	0	87,000		87,000
Producer B	0	(131,250)		(131,250)
Producer C	0	44,250		44,250
Grand Total	0	0		0

Note: Negative indicates that the imbalance is due (owed) to the operator/producer.

2/23/2001 7:44 AM

**System-Wide Notice Detail and Text**

Page 1 of 1

**Notice ID:** 373    **Initiate**

**Prior Notice ID:**

**Notice Type:** Operational flow order

**Critical Ind:** Yes

**Effective Date:** 2/21/2001 13:10

**Posting Date:** 2/21/2001 13:10

**End Date:** 4/1/2001 09:00

**Response Date:**

**Required Response:** No response required

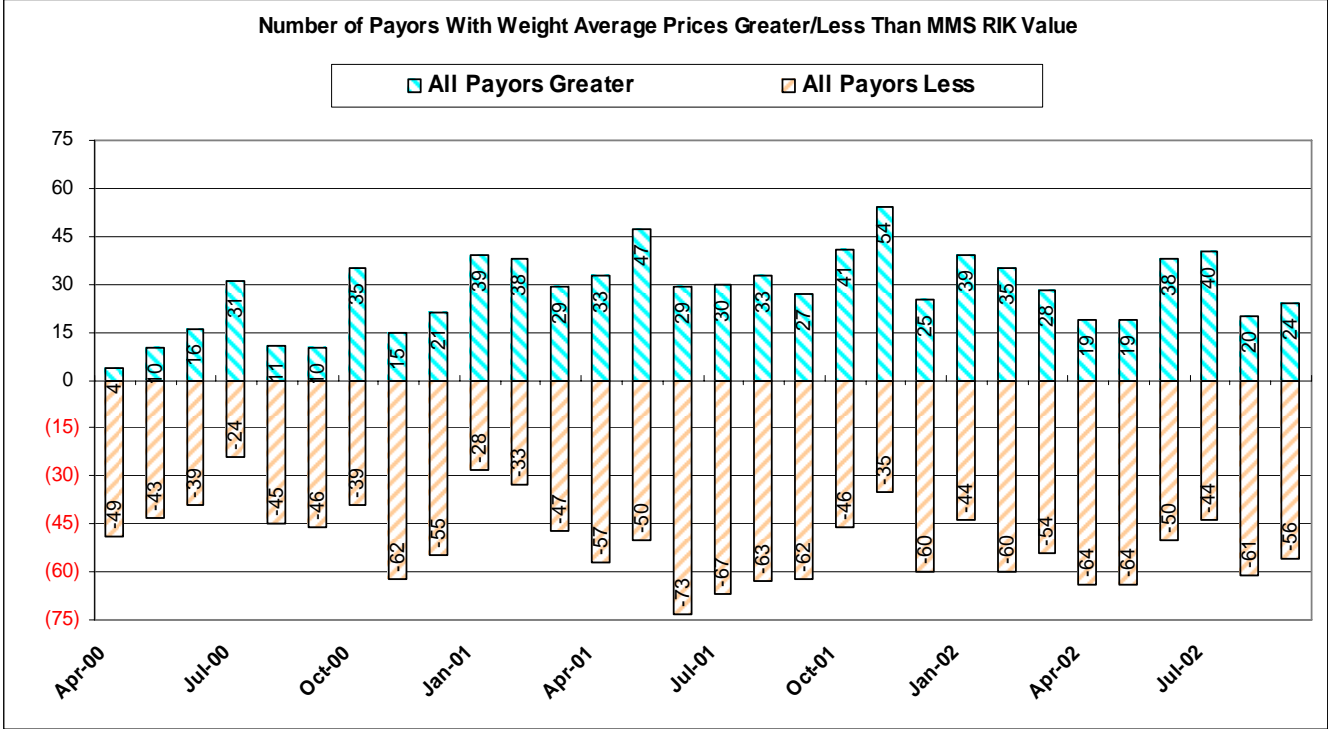
**Contact Name**    **First:**

**Last :**

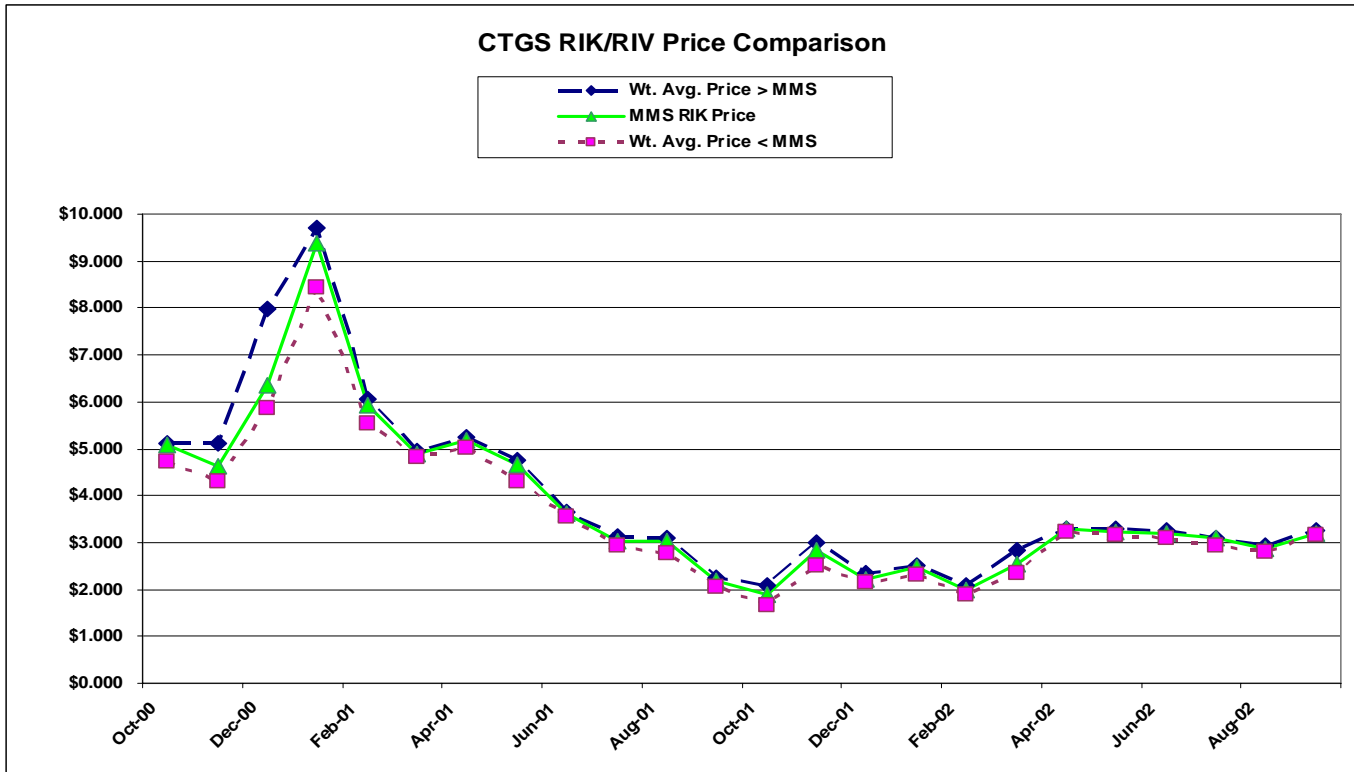
**Phone:**

OFO on BTU's: For March, the OFO restricting receipts into ANR's SE System with BTU's Exceeding 1050 (Notice # 367) will remain in effect. To insure continuity of flow, ANR recommends that all parties with processing arrangements for March 2001, notify ANR of such arrangements, including shrinkage factors, by February 26, 2001.

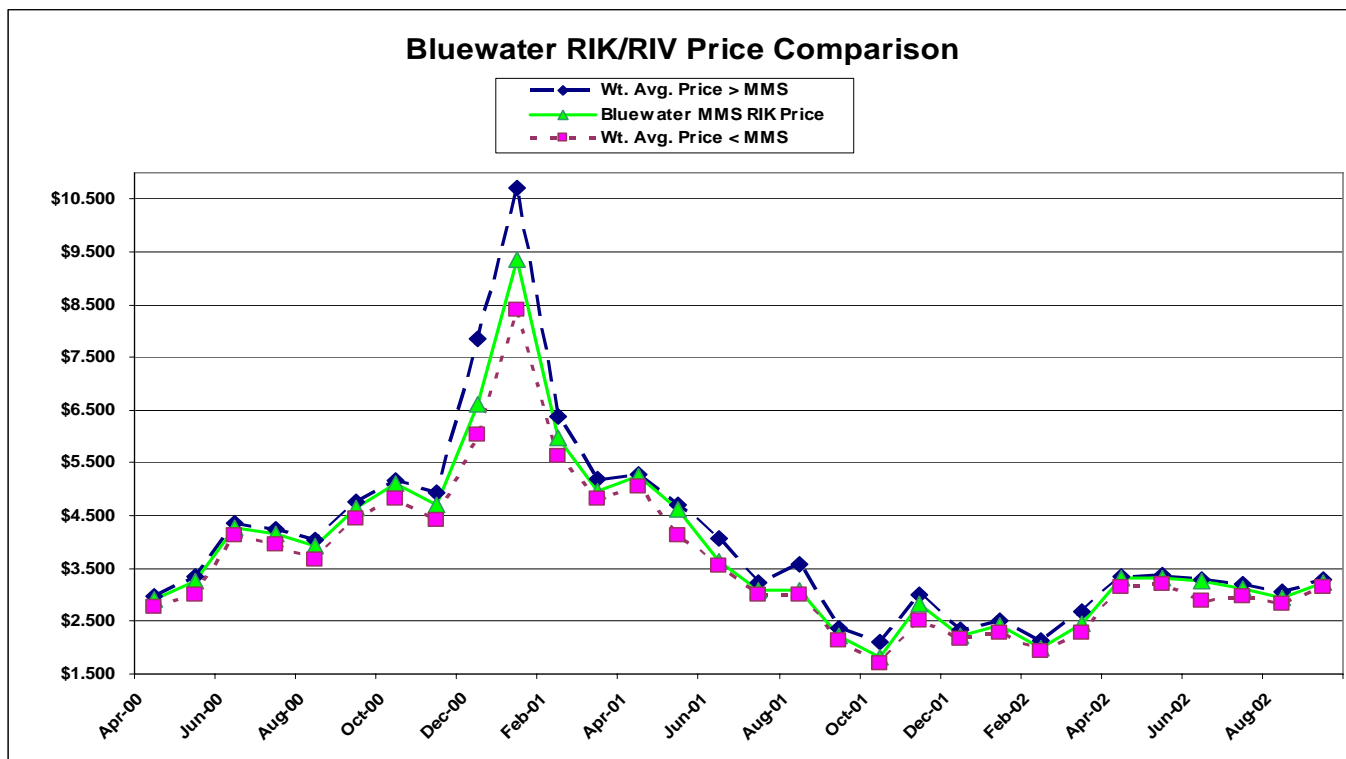
### CTGS, Bluewater, Stingray, & NHIS Systems



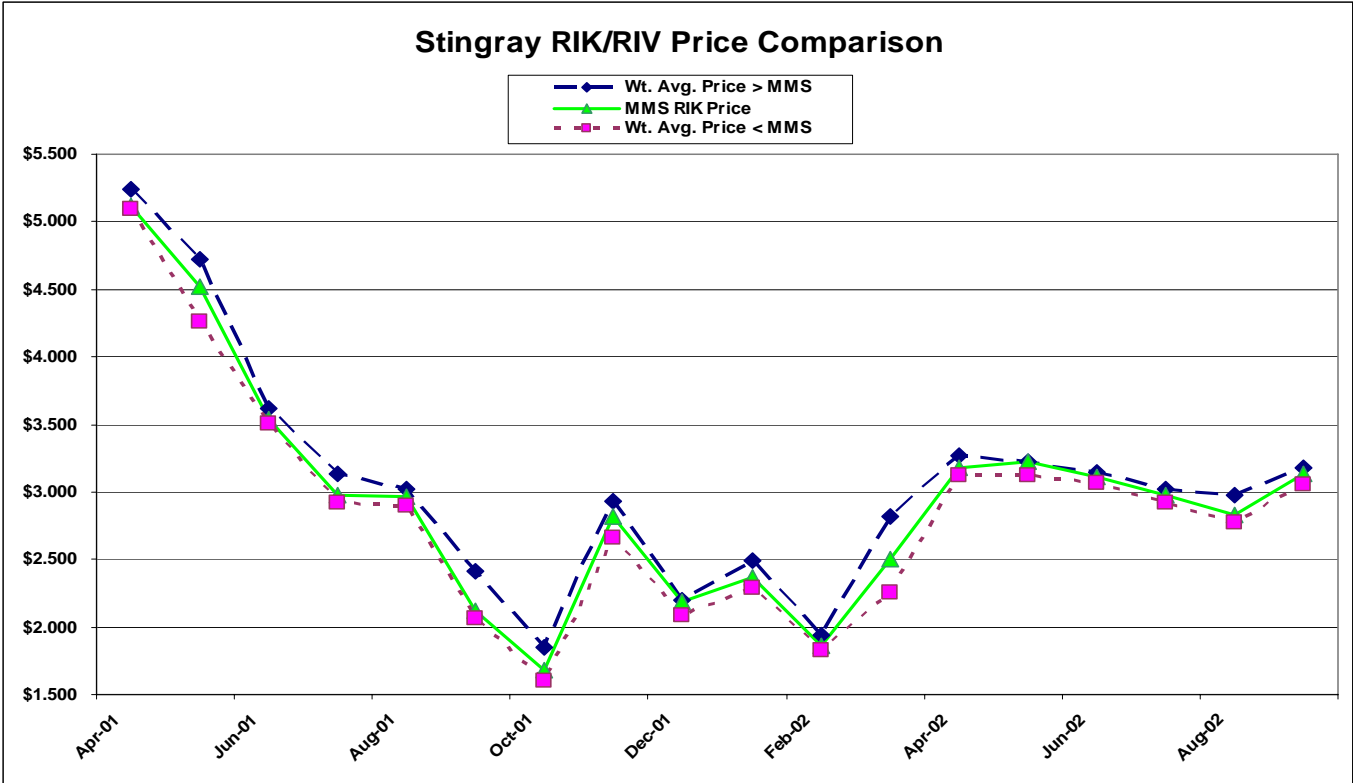
Month/Year	Number of Payors with Prices > MMS	Number of Payors with Prices < MMS
April 2000	4	49
May 2000	10	43
June 2000	16	39
July 2000	31	24
August 2000	11	45
September 2000	10	46
October 2000	35	39
November 2000	15	62
December 2000	21	55
January 2001	39	28
February 2001	38	33
March 2001	29	47
April 2001	33	57
May 2001	47	50
June 2001	29	73
July 2001	30	67
August 2001	33	63
September 2001	27	62
October 2001	41	46
November 2001	54	35
December 2001	25	60
January 2002	39	44
February 2002	35	60
March 2002	28	54
April 2002	19	64
May 2002	19	64
June 2002	38	50
July 2002	40	44
August 2002	20	61
September 2002	24	56



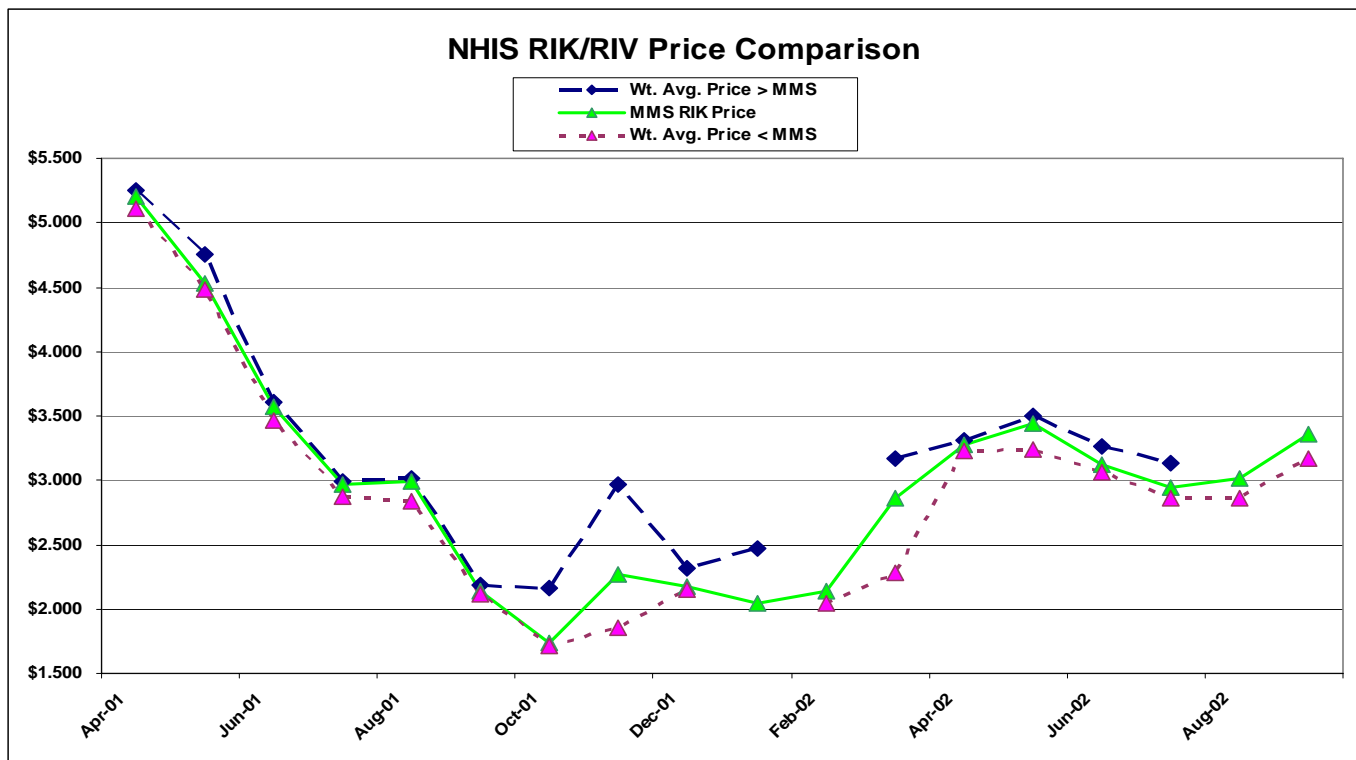
Month/Year	Weight Average Price > MMS	MMS RIK Price	Weight Average Price < MMS
October 2000	\$5.130	\$5.079	\$4.734
November 2000	\$5.120	\$4.618	\$4.284
December 2000	\$7.970	\$6.362	\$5.848
January 2001	\$9.711	\$9.390	\$8.429
February 2001	\$6.048	\$5.920	\$5.545
March 2001	\$4.954	\$4.900	\$4.825
April 2001	\$5.245	\$5.183	\$5.030
May 2001	\$4.770	\$4.645	\$4.293
June 2001	\$3.633	\$3.617	\$3.538
July 2001	\$3.112	\$3.030	\$2.945
August 2001	\$3.092	\$3.023	\$2.767
September 2001	\$2.240	\$2.172	\$2.060
October 2001	\$2.098	\$1.879	\$1.651
November 2001	\$3.002	\$2.843	\$2.515
December 2001	\$2.341	\$2.201	\$2.135
January 2002	\$2.497	\$2.469	\$2.315
February 2002	\$2.081	\$1.999	\$1.893
March 2002	\$2.821	\$2.545	\$2.348
April 2002	\$3.299	\$3.278	\$3.211
May 2002	\$3.300	\$3.239	\$3.159
June 2002	\$3.264	\$3.207	\$3.100
July 2002	\$3.106	\$3.084	\$2.942
August 2002	\$2.3928	\$2.881	\$2.813
September 2002	\$3.257	\$3.202	\$3.157



Month/Year	Weight Average Price > MMS	MMS RIK Price	Weight Average Price < MMS
April 2000	\$2.969	\$2.779	\$2.779
May 2000	\$3.347	\$3.271	\$3.013
June 2000	\$4.367	\$4.286	\$4.121
July 2000	\$4.231	\$4.168	\$3.949
August 2000	\$4.053	\$3.918	\$3.657
September 2000	\$4.777	\$4.657	\$4.448
October 2000	\$5.156	\$5.105	\$4.828
November 2000	\$4.939	\$4.701	\$4.402
December 2000	\$7.843	\$6.603	\$6.041
January 2001	\$10.698	\$9.346	\$8.407
February 2001	\$6.386	\$5.971	\$5.615
March 2001	\$5.199	\$4.957	\$4.826
April 2001	\$5.288	\$5.241	\$5.041
May 2001	\$4.707	\$4.632	\$4.141
June 2001	\$4.076	\$3.654	\$3.540
July 2001	\$3.245	\$3.079	\$2.989
August 2001	\$3.592	\$3.074	\$2.989
September 2001	\$2.380	\$2.209	\$2.127
October 2001	\$2.130	\$1.829	\$1.716
November 2001	\$3.010	\$2.841	\$2.523
December 2001	\$2.341	\$2.228	\$2.151
January 2002	\$2.512	\$2.430	\$2.281
February 2002	\$2.123	\$1.989	\$1.930
March 2002	\$2.688	\$2.439	\$2.285
April 2002	\$3.347	\$3.320	\$3.137
May 2002	\$3.372	\$3.316	\$3.211
June 2002	\$3.287	\$3.254	\$2.889
July 2002	\$3.194	\$3.119	\$2.980
August 2002	\$3.058	\$2.938	\$2.840
September 2002	\$3.287	\$3.239	\$3.149



Month/Year	Weight Average Price > MMS	MMS RIK Price	Weight Average Price < MMS
April 2001	\$5.244	\$5.120	\$5.090
May 2001	\$4.719	\$4.519	\$4.265
June 2001	\$3.615	\$3.537	\$3.502
July 2001	\$3.136	\$2.971	\$2.916
August 2001	\$3.019	\$2.966	\$2.901
September 2001	\$2.408	\$2.124	\$2.066
October 2001	\$1.850	\$1.675	\$1.603
November 2001	\$2.927	\$2.815	\$2.662
December 2001	\$2.198	\$2.190	\$2.091
January 2002	\$2.491	\$2.366	\$2.287
February 2002	\$1.945	\$1.861	\$1.831
March 2002	\$2.818	\$2.508	\$2.260
April 2002	\$3.267	\$3.184	\$3.128
May 2002	\$3.228	\$3.228	\$3.127
June 2002	\$3.141	\$3.107	\$3.061
July 2002	\$3.021	\$2.980	\$2.921
August 2002	\$2.971	\$2.832	\$2.777
September 2002	\$3.170	\$3.138	\$3.054



Month/Year	Weight Average Price > MMS	MMS RIK Price	Weight Average Price < MMS
April 2001	\$5.257	\$5.204	\$5.111
May 2001	\$4.754	\$4.534	\$4.477
June 2001	\$3.611	\$3.569	\$3.466
July 2001	\$2.987	\$2.968	\$2.867
August 2001	\$3.020	\$2.992	\$2.836
September 2001	\$2.192	\$2.137	\$2.110
October 2001	\$2.168	\$1.732	\$1.713
November 2001	\$2.962	\$2.267	\$1.860
December 2001	\$2.317	\$2.178	\$2.147
January 2002	\$2.468	\$2.046	\$2.044
February 2002	\$2.136	\$2.136	\$2.044
March 2002	3.167	\$2.861	\$2.283
April 2002	\$3.310	\$3.276	\$3.231
May 2002	\$3.495	\$3.442	\$3.239
June 2002	\$3.269	\$3.120	\$3.067
July 2002	\$3.131	\$2.944	\$2.863
August 2002	\$3.016	\$3.016	\$2.859
September 2002	\$3.358	\$3.358	\$3.169

