Wyoming Oil Royalty In Kind Pilot

Evaluation Report
October 1998 – March 2000

PREFACE

The Initial Draft Report on the Wyoming Oil Royalty-In-Kind Pilot was released for comments in March 2001. Upon the receipt of comments, an Addendum to the initial report was prepared. Modifications to the introduction indicating the receipt of comments on the Initial Draft Report and that Addendum are the only differences between this Final Report and the Initial Draft Report issued in March 2001.

Wyoming Oil Royalty In Kind Pilot

Executive Summary

The Wyoming Oil RIK Pilot successfully demonstrates that taking oil production in kind and selling it through a competitive bid process is a viable alternative to the historical method of taking royalties in value in some circumstances.

The Wyoming Oil Royalty In Kind pilot was established with the following criteria as a basis for evaluating its success:

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

The Wyoming RIK pilot has met these criteria for the period under review in that:

- RIK has reduced the period of value uncertainty for MMS and lessees from years to months
- RIK royalty receipts exceeded comparable in value royalties by approximately $810,000
- RIK streamlined processes have established a foundation for administrative savings for MMS and industry in future periods.

The Pilot provided the MMS and the State with valuable experience in operating an ongoing RIK program. In several areas, the three sales allowed the MMS and State to review previous phase results and improve processes for the next cycle. Reviewing the bidding mechanisms and which properties were receiving bids led to the expansion of the possible bidding and pricing mechanisms and to the elimination of trucked properties from subsequent sales. Feedback from sale participants provided impetus to eliminating burdensome and unnecessary qualification requirements. The MMS and the State need to further investigate other pricing mechanisms and different sales terms (1, 2, or 3 months) as a result of the Pilot. The Wyoming oil market is complex. Overall, the value received in kind was at or above the comparable in value number; however, this was not the case for every month for every property.

Any future expansion of the RIK program would assist the MMS in meeting it strategic and Government Performance and Results Act goal of assuring compliance sooner and on a broader universe of properties.

The knowledge gained from the Pilot provides the MMS with invaluable experience for any future RIK activities. Lessons learned from the Wyoming oil RIK pilot are now being utilized in competitive oil sales and small refiner sales and Strategic Petroleum Reserve exchanges in the Gulf of Mexico. The MMS and the State have demonstrated that they can initiate and maintain an ongoing oil RIK program.

Foreward

The Minerals Management Service (MMS) and the State of Wyoming's Office of State Lands and Investments (State) have been cooperatively developing an oil royalty in kind (RIK) program since 1998. The MMS performed an evaluation of the RIK efforts in Wyoming. The evaluation covered the eighteen-month period from October 1998 through March 2000. Comments were requested and received on the evaluation report in the spring of 2001. The comments revolved around three issues: sales benchmarks, comparisons to State taxation data, and bidders at RIK sales. These three issues are addressed at the end of the evaluation report in the Addendum. The Addendum also provides comparisons for additional sales periods that occurred after the publication of the initial evaluation report. The Addendum is the only section of the report that has been added since the initial release of the report. No additional data or time periods have been analyzed.

Summary of Findings

In evaluating the first 18 months of the Wyoming Oil Royalty in Kind Pilot, MMS considered the following factors:

- What are the impacts on government revenues of taking royalties in kind?
- What are the impacts on the administrative costs for both government and lessees?
- Can we collect royalties with greater certainty, simplicity, and accuracy?

This evaluation supports the following findings:

Selective use of royalty in kind should be revenue neutral

There are limited price benchmarks available by which to judge the revenues received for the sale of royalty oil in Wyoming. The two measures used in this report are the average of posted prices (large buyers "post" a price at which they will buy specific types of oil in a region) and the values reported by lessees to the State of Wyoming for royalty and severance tax purposes.

Over the 18-month period covered in this report, MMS receipts from the sale of RIK oil exceeded posted prices by an average of $3.85 per barrel and exceeded the values reported to the State by an average of $0.45 per barrel. While the second measure, in particular, suggests that the pilot had a positive revenue results, MMS makes a conservative finding about revenue neutrality due to:

- The lack of publicly transparent indicators of value for oil in Wyoming on which to base a comparison;
- The values reported to the State of Wyoming for royalty and severance tax purposes were largely un-audited at the time of the evaluation. To the extent that Wyoming State auditors find additional monies due, the 45-cent premium may be reduced; and
- The final 15 of the 18 months covered by this evaluation were a period of steadily rising oil prices. MMS recognizes that any findings with respect to revenues over this time period may not apply to other market conditions.

Royalty in kind is not appropriate for all properties

After reviewing the first two sales, MMS and Wyoming decided to stop offering RIK oil from properties that were served only by trucks (i.e. not connected to pipelines). These properties accounted for about two-thirds of the leases included in the sales, but only 10 percent of the oil. In general, each of these leases produced small volumes of oil, and many of them had reduced royalty rates. There was not a robust market for the RIK oil from these leases. The bids were low and there was usually only a single bidder. In many instances, that bidder was the company that was already trucking the oil. The additional burden of understanding the logistics and aggregating the small volumes of oil from these properties made them unattractive to potential bidders. In the future, MMS might experiment with ways to offer RIK from these properties that could enhance bidding, but for now, MMS has no plans to offer oil from these properties in its RIK sales.

Lessees benefit from reduced administrative burdens

The lessees, who are responsible for reporting and paying royalties, benefit from reduced administrative burdens in two ways:

- While lessees still have to report on production volumes where royalty is taken in kind, they no longer have to report value information. The purchaser of the RIK oil does the financial reporting and because of the aggregated volumes the purchaser buys, there was an 80 percent reduction in total reporting.
- Because the lessees no longer are reporting value information on RIK leases, there are no audits of valuation issues on those leases, and no associated administrative appeals and litigation.

MMS cannot draw any conclusions about the net effect on its own administrative costs at this time. While it also benefits from the reductions in reporting and valuation disputes, it performs functions for RIK that it wouldn't otherwise perform, such as the preparation and conduct of oil sales and settling imbalances. During the period covered by this evaluation, mostly manual RIK processes were being developed in an exploratory pilot phase. As such, quantification of comparative administrative costs of RIV and RIK was not meaningful and was thus not pursued. The Activity Based Costing being implemented by the MMS should provide data to assist in quantifying costs in the future.

RIK can result in greater certainty for both the lessee and government

The RIK process generally allows MMS to "close the books" on the royalty obligation more quickly than when royalties are paid in value. Using source documents, such as pipeline statements, the royalty volumes can be verified within 90-120 days after the production month. Payments from the sale of RIK oil are based on a price set in a contract, so valuation disputes, which can last for years if administrative appeals and litigation are involved, are generally avoided. Thus, the entire royalty transaction can be verified and reconciled within a matter of months.

The royalty equation can be summarized as:

Royalty = Volume x Value (with appropriate adjustments) x Royalty Rate

Selling the government's share of production in kind directly impacts the Value component. RIK removes the Value calculation from the responsibility of the lessee and places it on the lessor and purchaser. RIK simplifies the price calculation since it is part of the contract agreed to by the seller and purchaser. Historically, Value (and the transportation element) has been the most contentious and labor intensive component of the royalty equation.

The MMS and the State took and sold in kind between 25 and 30 per cent of the royalty barrels (Federal and State) produced in Wyoming during the initial 18 months of this analysis. A total of 1.643 million barrels of Federal and State oil were sold with a value of $27.66 million.

The Wyoming oil RIK pilot occurred during a time of extreme price volatility. Generally, the values received in kind were greater than the values received in value. The MMS compared the royalties received for the oil sold in kind to similarly situated oil for which royalties were calculated and paid in value. The in kind oil's value exceeds the in value oil's value in excess of $810,000 (Federal - $683,000 and State - $133,000) for the initial 18 months of this analysis. Several factors (volumes, length and price terms of the contract, aggregation ability, and transportation availability) impacted the month-to-month comparisons.

The MMS compared the RIK values to the postings average. The RIK value exceeded the postings average by a total dollar differential of $6.33 million. This equates to $3.85/bbl.

The MMS declined bids in Phase 1a. This decision resulted in the avoidance of approximately $72,000 in reduced royalties, and in part validated the effectiveness and control over the bid process.

Royalties are paid 5 days earlier under the RIK pilot contracts. This equates to approximately $1,000/month additional monies.

Definitive quantification of the actual administrative savings realized by the MMS, the State, and the industry is difficult. While MMS expects cost savings on some functions (e.g., audit, appeals), a permanent RIK program requires that MMS shift resources into new functions (e.g., sale of RIK volumes, credit reviews of potential purchasers, etc.). Since MMS is still developing its processes for managing RIK, it cannot document any cost savings at this time. The implementation of an Activity Based Costing system will assist in performing analyses in this area in the future. In addition, MMS is streamlining the reporting requirements for in value payments in conjunction with the reengineering of the Minerals Revenue Management program. Thus, the basis for any cost comparison between ongoing RIK and in value activities is currently changing. The reporting

requirements for the RIK pilot resulted in a reduction of approximately 80 per cent of the reported lines. The industry estimates a reduction for lessees of approximately $1,700 per year for each oil lease taken in kind permanently. This reduction pertains to costs (reporting, audit, etc.) related to the lease, with almost half of the savings from avoided costs of audits and valuation disputes. Any MMS and industry savings will be realized the longer the RIK program continues and processes become standardized. Reduced litigation costs present an additional, but not insignificant potential savings to all parties.

The MMS instituted a revised reconciliation process for the oil RIK pilot. Although needing further improvements, the revised process reduces the period of value uncertainty from years to months. Through the competitive bid process which specifically details the value mechanism, the lessor and lessee receive value certainty on a more timely basis. MMS will continue to refine RIK processes to reduce costs for all parties.

The MMS and the State modified the available properties and the bid criteria for each sale. The RIK pilot was, and still is, an ongoing learning experience. The companies involved in the RIK pilot have been contacted (i.e., Dear Operator Letters, public meetings, day-to-day telephone, emails, etc.). Positive and negative feedback was received. The MMS and the State have taken actions to alleviate concerns and remedy problems in the evolution and development of the program. The MMS and the State are continually investigating new approaches to improve the efficiency and effectiveness of the Wyoming oil RIK program.

Comments received on the draft evaluation report raised questions concerning benchmarks for the RIK sales and more specifically how RIK sales compared to the revised (June 2000) oil valuation regulations as a benchmark.

The review of RIK sales against benchmarks shows that Wyoming pricing contains non-transparent pricing indicators or market adjustments; thus, making sales comparisons in Wyoming difficult. Our review also shows there is not a direct link or relationship between published Canadian prices and the NYMEX, or published prices in the United States. Because of these factors, there is not one best method to sell crude oil in Wyoming. This is the same complexity that producers in Wyoming face and base their royalty payments. In order to reduce pricing risk, some producers sell their crude oil using a variety of pricing mechanisms or what is termed a “basket” approach.

Comparisons were made to the revised oil valuation regulations as a benchmark. The regulations acknowledged that the Wyoming area is somewhat unique and devised a valuation methodology separate than the rest of the United States. However, using a proxy for oil valuation regulations, the results show RIK sales to be generally higher than the required regulatory method. Comparisons against audited royalty in-value data (there was none) were not performed.

Overall, RIK sales are within the range of market prices for Wyoming crude oil. The MMS continues to monitor current market conditions and offers the sale of crude oil using multiple pricing methods in order to achieve the best sales price.

Evaluation Report

Background

Under the terms of standard Federal and State oil and gas leases, the government is entitled to a share, known as a royalty, of production removed or sold from the lease. Historically, the government receives its royalty share "in-value", i.e., as a percentage of the sales proceeds received by the mineral lessee. The Government may take its royalty share "in-kind" (RIK) instead of "in-value"-- that is, by taking volumes of oil or gas equaling the percentage royalty share. The RIK pilot's structure is consistent with existing lease terms and examines where, when, and under what conditions RIK would be feasible without reducing revenue for the U.S. Treasury and for any state entitled to a share of those revenues.

In 1997, the MMS released a Royalty In Kind Feasibility Study which concluded that under the right circumstances, RIK "could be workable, revenue neutral or positive, and administratively more efficient for MMS and industry."

To test the conclusions of the study, the MMS and the State initiated an onshore pilot for crude oil from Federal leases in the Powder River and Big Horn Basins of Wyoming. In other pilots, MMS is also taking natural gas and oil royalties in kind in the Gulf of Mexico.

Federal leases in Wyoming currently produce approximately 10,340 of royalty barrels/day from four major geologic basins:

- Bighorn Basin (3,412 bbls/day – 33 per cent of royalty volumes)
- Powder River Basin (3,503 bbls/day – 34 per cent of royalty volumes)
- Green River Basin (2,532 bbls/day – 25 per cent of royalty volumes)
- Wind River Basin (639 bbls/day – 6 per cent of royalty volumes) and
- Other (254 bbls/day – 2 per cent of royalty volumes).

These volumes are approximately 19 per cent lower than the production levels at the beginning of the pilot.

Wyoming crude oil comes in different grades. For the first pilot, the MMS and the State decided to take production in kind from two basins for three different grades of oil: the Bighorn basin where production is almost entirely asphaltic sour and the Powder River basin where production is approximately 60 per cent sweet crude and 40 per cent general sour.

The MMS established minimum volume criteria for the inclusion of leases in the six-month sales. The primary reason for the establishment of volume criteria was to minimize the administrative burden on industry and the MMS. The criteria for leases

connected to pipelines was approximately 20 Bbls/day. This remained constant for the sales reviewed in this report. After reviewing all production levels in the basins, the 20 Bbls/day minimum appeared to be reasonable. For the two sales that included trucked properties, there was no minimum volume requirement on those properties. The MMS did attempt to aggregate properties during the sale process in order to minimize the effort involved in trucking the RIK oil being sold.

All successful bidders provided a letter of credit before taking any oil in kind.

October 1998 through March 1999 - Phase 1a

Bids for the first 6-month sale were submitted to the MMS as outlined in the Invitation for Bid (IFB) No. 3947 dated July 1, 1998. This sale included only Federal properties. Title to the royalty oil transferred at the wellhead. The MMS reserved the right to reject any bid based upon its economic analysis. The sale summary follows.

Phase 1a (10/98-3/99) Description	Big Horn Asphaltic Sour	Powder River Gen. Sour	Powder River Sweet	Total
Total Properties offered for bid	56	63	67	186
Bbls/day offered for bid	1782	890	1007	3679
Properties awarded	51	46	0	97
Bbls/day awarded	1736	780	0	2516
% of properties awarded	97%	71%	0%	52%
% of Bbls/day awarded	97%	88%	0%	68%
Winning Bidders				
Cenex				
EOTT				
Northridge Energy/Trans Canada				
Scurlock-Permian				
Western Gas Resources				

Figure 1

April 1999 to September 1999 - Phase 1b

Bids for the second 6-month sale were submitted to the MMS and State as outlined in IFB No. 3984 dated January 4, 1999. This sale included both Federal and State properties. The MMS and the State reserved the right to reject any bid based upon their economic analysis. The sale summary follows.

Phase 1b (4/99-9/99)	Big Horn Asphaltic	Powder River	Powder River	
Description	Sour	Gen. Sour	Sweet	Total
Total Properties offered for bid	55	63	67	185
Bbls/day offered for bid	1857	812	1136	3805
Properties awarded	41	47	20	108
Bbls/day awarded	1829	722	874	3425
% of properties awarded	75%	75%	30%	58%
% of Bbls/day awarded	98%	89%	77%	90%
Winning Bidders				
Cenex				
Eighty-Eight Oil Co.				
EOTT				
Scurlock-Permian				

Figure 2

October 1999 to March 2000 - Phase 1c

Bids for the third 6-month sale were submitted to the MMS and State as outlined in IFB No. 31010 dated July 22, 1999. Title to the royalty oil transferred at the wellhead. The MMS and the State reserved the right to reject any bid based upon their economic analysis. The sale summary follows.

Phase 1c (10/99-3/00)	Big Horn Asphaltic	Powder River	Powder River	
Description	Sour	Gen. Sour	Sweet	Total
Total Properties offered for bid	30	26	10	66
Bbls/day offered for bid	1704	526	1019	3249
Properties awarded	30	26	10	66
Bbls/day awarded	1704	526	1019	3249
% of properties awarded	100%	100%	100%	100%
% of Bbls/day awarded	100%	100%	100%	100%
Winning Bidders				
Cenex				
88 Oil				
Teppco				
Scurlock-Permian				

Figure 3

Elimination of Trucked Properties

Phases 1a and 1b requested companies to bid on any or all properties that were listed in the IFB. The IFB included properties that were not connected to pipelines – trucked properties. Trucked properties accounted for approximately two-thirds of the properties in the first two sales, but approximately only 10 per cent of the RIK volumes. When bids

were received, they were generally low compared to the leases connected to pipelines in the same area. Also in many instances the only bidder for the RIK oil was the same entity that would be paying in value and the same entity that would be physically trucking the oil - there seemed to be a lack of a robust market for the trucked properties. Many of the trucked properties are reduced royalty rate properties.

The MMS and the State reviewed the bids received in the first two phases. In addition to the purchasing companies expressing little or no interest in the trucked properties, the MMS and the State concluded that the values received for the pipeline system subgroups were noticeably greater than the values received for the trucked properties. They therefore decided that there was no economic incentive for including the trucked properties in subsequent sales. Using this information and recognizing the de minimus nature of the volumes and the administrative burden on both the seller and purchaser, the MMS and the State eliminated trucked properties from all sales after Phase 1b.

In the first two sales –Phases 1a & 1b – there were no restrictions on bidding. Companies could bid on any or all properties on any or all pipelines. The IFB for Phase 1c contained specific language in sections B.2.2.a, b, and c. This stated that companies could submit bids for a particular crude package (sour, asphaltic, or sweet) or pipeline system subgroup. This stipulation continued in Phases 2 and 3. All winning bids were received on a pipeline system subgroup basis. This is primarily for two reasons; first, bids received for properties are sensitive to the pipeline that connects the properties – bids were not being received for packages of properties where the properties flowed into different pipelines. Second, there were administrative savings for both the seller and purchaser in only allowing bidding on a pipeline basis.

Wyoming Pilot - Royalty In Kind Collections

In October 2000, royalty data was extracted from the MMS computer system. These detail lines represented the at-the-lease sales (RIK) for the pilot period. All Federal pilot leases were gathered and summarized. The State collected similar data for the 12-month period beginning April 1999. During the 18-month pilot period, 1.643 million barrels of Federal and State RIK oil were sold with a value of $27.66 million. The average price per barrel for all RIK oil ranged from a low of $5.79 in December 1998 to a high of $26.73 in March 2000.

Bid Evaluation

The MMS and the State have attempted to improve the bid evaluation process from sale to sale. The bid evaluation process used several criteria. Some of the criteria were:

- Are the bids comparable to values received for comparable properties?
- Are the bids in line with the appropriate futures prices?
- Is there an acceptable number of bidders on the property? and
- Has the bidder previously taken and paid for RIK oil?

All of the details of the bid evaluation process will not be provided because of the competitive and ongoing nature of the RIK program.

A total of nine different companies submitted bids during Phases 1a, 1b, and 1c. The number of bidders by phase was; 1a – 7, 1b – 6, and 1c – 7.

The MMS has maintained an overall conservative approach in the analysis and acceptance of bids for Wyoming RIK oil in an effort to provide a greater likelihood that the accepted RIK payments would exceed the probable in value payments had the oil not been sold.

For the first two sales, the MMS undertook the calculation of a minimum acceptable bid (MAB) which had to be exceeded before a bid was accepted. The State did the same calculation for sale 1b. In general, the MMS and the State used submitted royalty data for the same six-month period from the previous year. The MMS calculated a 6-month average for the royalty data, the NYMEX and the appropriate postings. Differences (higher or lower) between these three calculations were made. The MMS and the State applied adjustment factors to the differences. One adjustment for the bid to be acceptable depended on the number of payors on a property. If there was only one payor, the MAB was increased by a predetermined factor. If there were more than one payor on a lease, the MAB was the highest reported price. The MMS and the State also considered an adjustment due to the fact that the historical data had not been audited.

For the third sale, since there were no prior year in value payments for the majority of the properties, the MMS hired a consultant to assist in the market analysis of the RIK bids. Additionally, trucked properties were not included in the third sale for two primary reasons: 1) the values of the pipeline properties were noticeably higher than the values received for the trucked properties, and 2) the purchasing companies expressed little or no interest in the trucked properties.

In Phase 1a, the MMS did **not** accept bids on five of the Big Horn asphaltic sour properties, 17 of the Powder River general sour properties, and all 67 of the Powder River sweet properties. The MMS compared the potential royalty receipts using the rejected high RIK bids to the actual royalties received in value. For the five Big Horn properties the in value receipts were greater than the rejected RIK potential payments by approximately $1.84 per barrel (≈ $13,400 total) for the period October 1998 through March 1999. A similar comparison for the 67 Powder River sweet properties indicates the decision resulted in additional royalties of approximately $0.16 per barrel (≈ $30,200 total) and for the 17 Powder River general sour properties approximately $1.66 per barrel (≈ $28,500 total). The analysis confirms that when bids were rejected, the correct decision had been made.

In Phase 1b bids were rejected because bids were not submitted properly according to the requirements outlined in the IFB. One company submitted bids based upon its own posting – which wasn't one of the four postings used to calculate the average allowed per the IFB.

In Phase 1c no trucked properties were offered for bid. Using knowledge gained from the first two phases, the universe of bid mechanisms was expanded to include any readily available transparent pricing structure.

The following summarizes the changes made concerning the bidding mechanisms from sale 1a to 1c. A consequence of these changes was an increase in the complexity of the bid evaluation process.

Phase 1a

- Bids accepted for any number of individual properties
- Bids accepted for an entire package (Sweet, General Sour, or Asphaltic Sour)
- Bids accepted on pipeline connected (with a minimum volume threshold) or trucked properties
- For the Sweet package or properties, the bids were an increment or decrement from the average of the calendar month's daily closing (settle) price on the NYMEX.
- For the General Sour package or properties, the bids were an increment or decrement from the average of four Wyoming sour postings (Texaco, EOTT, Conoco, and Scurlock Permian) adjusted for gravity.
- For the Asphaltic Sour package or properties, the bids were an increment or decrement from the average of four Wyoming asphaltic postings (Texaco, EOTT, Conoco, and Scurlock Permian) adjusted for gravity.
- No bids accepted on self-defined packages.

Phase 1b

- Bids accepted for any number of individual properties
- Bids accepted for an entire package (Sweet, General Sour, or Asphaltic Sour)
- Bids accepted on pipeline connected (with a minimum volume threshold) or trucked properties
- For the Sweet package or properties, the bids were an increment or decrement from 1) the average of the calendar month's daily closing (settle) price on the NYMEX, or 2) the calendar month's average of the following four Wyoming sweet postings (Equiva, Conoco, EOTT, and Scurlock Permian).
- For the General Sour package or properties, the bids were an increment or decrement from the average of four Wyoming sour postings (Equiva, EOTT, Conoco, and Scurlock Permian) adjusted for gravity.
- For the Asphaltic Sour package or properties, the bids were an increment or decrement from the average of four Wyoming asphaltic postings (Equiva, EOTT, Conoco, and Scurlock Permian) adjusted for gravity.
- No bids on self-defined packages.

Phase 1c

- Bids accepted for an entire package (Sweet, General Sour, or Asphaltic Sour)

- Bids accepted on individual pipeline system subgroups (with a minimum volume threshold). Trucked properties were not included.
- For the Sweet package or pipeline subgroups, the bids were an increment or decrement from; 1) the average of the calendar month's daily closing (settle) price on the NYMEX; or 2) the calendar month's average of four Wyoming sweet postings (Equiva, Conoco, EOTT, and Scurlock Permian); or 3) any other transparent pricing structure for which documentation is readily available and supportable.
- For the General Sour package or pipeline subgroups, the bids were an increment or decrement from 1) the average of the calendar month's daily closing (settle) price on the NYMEX, or 2) the calendar month's average of four Wyoming sour postings (Equiva, Conoco, EOTT, and Scurlock Permian) adjusted for gravity, or 3) any other transparent pricing structure for which documentation is readily available and supportable.
- For the Asphaltic Sour package or pipeline sub groups, the bids were an increment or decrement from 1) the average of the calendar month's daily closing (settle) price on the NYMEX, or 2) the calendar month's average of four Wyoming asphaltic postings (Equiva, Conoco, EOTT, and Scurlock Permian) adjusted for gravity, or 3) any other transparent pricing structure for which documentation is readily available and supportable.
- No bids on self-defined packages.
- No bids on individual properties.

Overview of Wyoming Pilot Market Conditions

The Wyoming RIK pilot has occurred during what arguably has been the most volatile pricing environment in history for Wyoming oil producers and area refiners. During the 18-month period under review, beginning October 1, 1998, the volatility in West Texas Intermediate ranged from a monthly low of $11.31 per barrel to a monthly high of $31.53 per barrel.

This high degree of volatility and price uncertainty impacts market fundamentals in many ways. Producers, requiring a competitive return on investment funds, may analyze their investment decisions more conservatively and possibly reduce capital budgets. Drilling programs are suspended and enhanced oil recovery projects are not initiated. This has a longer-term impact on supply and brings uncertainty to refiners through long-term supply concerns. This uncertainty of supply typically manifests itself in refineries finding access to alternate crude supplies, as has been the case in Wyoming the past several years. Near term reactions by producers to low prices is manifested by shut-ins of uneconomic production, suspension of enhanced oil recovery projects, and a scaling back of repair programs for wells that require repair. The impacts to refiners from these actions are immediate and can result in very competitive bidding "wars" for production that can be refined immediately. Conversely, during extended periods of higher prices, producer development activity increases resulting in production increases and less competitive bidding scenarios.

While exact data specific to the Wyoming RIK pilot is difficult to obtain, it is estimated that year to year production declined by over 25 per cent from 1997 to 1999 during the period of lowest prices. Much of the decline can be attributed to reduced producer

spending and shut-ins of uneconomic production. With cash costs approaching $10.00 per bbl for heavy sour production, many producers were required to shut-in production during this period. Conversely, during the high price environment we are now experiencing, production declines have eased and in some areas growth in production has been noted.

The Canadian production that competes with Wyoming's production is very similar in nature, albeit typically less mature and therefore more productive on a well-by-well basis. Additionally, as most of the heavy production is enhanced recovery based (steam) and requires blending with condensate for viscosity control to allow pumping long distances on pipelines, it typically has very similar if not slightly higher costs associated with production and transportation. As such, during the Wyoming RIK pilot the Canadian production that competes with the Wyoming production was in a similar decline pattern as occurred in Wyoming. During sustained higher prices, as seen most recently, Canadian production is able to recover more quickly and, being less mature, is a better source for new production into the Wyoming refinery environment (PADD 4 – Petroleum Administration for Defense Districts 4). This is the case and has been recently validated by the new Express Pipeline connection into Billings, Montana.

While Wyoming crude must compete with Canadian crude, not all Wyoming crude competes with Canadian crude at Billings. Therefore, a comparison of RIK values and Canadian postings adjusted for location, gravity, and sulfur, would be of limited use. Additionally, the Canadian crude at Edmonton or Hardisty can be easily transported through pipelines in Canada into PADD 2 refineries located in Detroit and Chicago. This is not the case for the Wyoming crude.

An expanded knowledge of the Canadian market can assist the MMS and the State in evaluating future RIK bids. The Canadian postings may even provide an additional bid mechanism for future RIK sales.

The MMS has determined that for the time period involved in this study, the Canadian benchmarks are not a reliable price for purposes of comparison with the values received under the RIK pilot. Because markets are dynamic and new factors (additional pipelines, refineries, etc.) develop, the MMS will continue to analyze the Canadian benchmarks in future RIK sales of Wyoming crude.

Comparing RIK to Postings and In Value Prices

In addition to the Canadian markers discussed above, the MMS identified the following public indices as potential comparators with the in kind values received during the 18-month period covered by this report. Publicly available indices include the New York Merchantile Exchange (NYMEX) West Texas Intermediate future price at Cushing, Oklahoma, the West Texas Sour (WTS) price at Midland, Texas, and the Wyoming Sweet spot price at Guernsey, Wyoming.

In its oil valuation rulemaking in 2000, the MMS recognized the production in the Rocky Mountain Region is controlled by a relatively few companies and the number of buyers is more limited than in the Texas, Gulf Coast, or Midcontinent areas. As a result, there is less spot market activity and trading in this area due to the control over production and refining. The NYMEX is a futures market that bears little resemblance to the market at the lease without adjustments. The MMS dropped the NYMEX as a valuation basis for oil in the Rocky Mountain Region from the final rule.

In the same rulemaking, the MMS recognized that the only published spot price for the Rocky Mountain Region was at Guernsey, Wyoming. However, that price is the result of a survey of a few trades – an indicator that the market is not robust – and therefore not a reliable measure of value.

Another public index available for comparison with the sour Wyoming crudes being offered is West Texas Sour at Midland. With the proper adjustments for quality and location differentials, a comparison with the Wyoming sour crude could possibly be made. However, it would not accurately reflect the market in Wyoming.

The NYMEX, WTS at Midland, and spot price at Guernsey may have some correlation with the values received for the different Wyoming crude types offered in the RIK pilot. However, for the reasons stated above, the MMS decided that detailed comparisons with these comparators would be of little value.

The posting average, the RIK value, and the Wyoming in value data are at the lease. The RIK and the Wyoming in value data for the asphaltic sour and the general sour reflect the values reported by the purchasers (adjusted for gravity) and have not been readjusted back to 40 degrees API. In order to compare accurately these indices with the values received for the RIK oil, the proper adjustments for API gravity and location would need to be calculated.

The RIK monthly values for the three crude types have been compared to the Wyoming in value data and the posting average. Attachment 1 is for the Powder River Basin – General Sour. Attachment 2 is for the Big Horn Basin – Asphaltic Sour. Attachment 3 is for the Powder River Basin –Sweet.

The Powder River Basin – General Sour (Attachment 1) and the Big Horn Basin – Asphaltic Sour (Attachment 2) were compared to the average of the 4 postings permitted in the IFB (at 40° API and adjusted for gravity) and to the State of Wyoming's in value price data (adjusted for gravity). The comparisons for the general and asphaltic sour crudes are for 18 months. The weighted average gravity of the general sour crude was 23.7° API for the pilot period. This resulted in a deduction from the posting of $2.22. The weighted average gravity of the asphaltic sour crude was 20.3° API for the pilot period. This resulted in a deduction from the posting of $2.90.

In Attachment 3 the Powder River Basin – Sweet was compared to the average of the four postings permitted in the IFB and to the State of Wyoming's in value price data. All

three values are at 40° API as volumes of sweet sold are deemed to be 40°, regardless of the actual gravity. The comparison for the sweet crude is for 12 months as there was no sweet sold in the first RIK sale.

Crude oil prices increased in almost every month over the analysis period. Prices fell in the first 2 months of the pilot. When prices began increasing in the December 1998 - January 1999 time frame, the RIK values were less than the in value prices. This is reflective of the 6-month term sales of the in kind volumes of oil. In April 1999, when a new contract went into effect, the RIK prices consistently exceeded the Wyoming in value prices.

The RIK price always exceeds the postings average. The total dollar differential between the RIK value and the posting's value was $6.33 million for Federal and State production for the 18-month period. This equates to a per barrel difference of $3.85. The differential between the RIK price and the posting average is consistent for each 6-month RIK sales period. The explanation for this is that the posting average does not include any premiums that are offered to purchasers. Purchasers utilize premiums and discounts as a way to adjust postings to current market conditions.

The RIK price is generally greater than the Wyoming in value price. This is possibly because of the nature of the bidding mechanisms. Aggregating volumes would increase the average price. Detailed data indicates that not all properties are up or down. This is because the bids are for a package. A package may include multiple properties with significantly different production levels. Within a package, the average price may exceed the in value price for some properties and be less than the in value price for others. The aggregation effect tends to raise the average price received for all properties in a package.

Specific analysis of the data is best performed in 6-month intervals – the length of the individual contracts.

Wyoming Severance Tax Comparison

For Phase 1a, the State of Wyoming retrieved actual in value royalty payments from their automated system. For Phases 1b and 1c, Wyoming extracted information from its Severance Tax database for those properties in Phases 1b and 1c. All values used in the comparison are based on gravity adjusted values at the lease.

Article 2 (Oil and Gas) of Title 39 (Taxation and Revenue) of the State of Wyoming Revenue Statutes provides guidance concerning the valuation of crude oil for tax purposes. The fair market value for crude oil is determined after the production process is completed. Expenses incurred by the producer prior to the point of valuation are not deductible in determining the fair market value the oil. The production process for crude oil or lease condensate is completed after extracting from the well, gathering, heating and treating, separating, injecting for enhanced recovery, and any other activity which occurs before the outlet of the initial storage facility or lease automatic custody transfer unit. If the crude oil is sold to a third party, or processed or transported by a third party prior to

the point of valuation then the fair market value shall be the value established by bona fide arm's length transaction. If the crude oil is not sold at or prior to the point of valuation by bona fide arm's length sale, or, if the production is used without sale, Wyoming will identify a method to be used. Wyoming provides four methodologies.

1. Comparable Sales - The fair market value is the representative arm's length market price for minerals of like quality and quantity used or sold at the point of valuation taking into consideration the location, terms, and conditions under which the crude is being sold or used.

2. Comparable Value – The fair market value is the arm's length sales price less transportation fees charged to other parties for oil of like quantity, taking into consideration the quality, terms, and conditions under which the oil is being transported.

3. Netback – The fair market value is the sales price minus the expenses incurred by the producer for transporting produced oil to the point of sale.

4. Proportionate Profits – The fair market value is the total amount received from the sale of the oil minus exempt royalties, nonexempt royalties and production taxes times the quotient of the direct cost of producing the oil divided by the direct cost of producing and transporting the oil; plus the nonexempt royalties and production taxes.

The methodology for calculating value for Wyoming severance taxes and Federal royalties in value are very similar, particularly in determining allowable deductions.

Wyoming calculated the average monthly price per barrel for all production from the RIK properties using unaudited data. This price was compared to the RIK contract price for each month during the RIK Pilot. The results of this comparison - with proprietary data excluded - are presented in Attachments 4-6. The MMS sells its oil for 6-month terms. As expected, for some months, the severance tax price is greater than the RIK contract price, and for other months, the converse is true. The data does highlight some properties for which the severance tax values are higher for the entire 6-month period of a sale phase. This information is beneficial to the MMS.

The MMS summed the Federal RIK production from all of the properties involved in each phase of the RIK pilot. The in value prices for Phase 1a and the severance tax prices for Phases 1b and 1c and the RIK contract prices were multiplied by the Federal volumes and the differences summed. For the entire 18-month period, the cumulative RIK value exceeded the in value/severance tax value by approximately $0.45/barrel or approximately $683,000.

Wyoming performed the same comparison for the State's share of the production from its RIK properties. For the last 12 months of the pilot, the RIK value exceeded the severance tax value by approximately $1.12/barrel or approximately $133,000.

Wyoming's price per barrel difference is greater than the MMS' primarily because Wyoming did not participate in phase 1a. Other contributing factors could be because Wyoming did not have a share of production in all RIK properties, and some properties the State did have a share in did better than the average.

Over the comparison period, the differential between the RIK values and the State values varies from month to month and by crude types. This is because the ratio of Federal production to State production is not constant. If all leases (Federal and State) produced exactly the same volumes from month to month, then the ratio would be constant. However, this is not the case. The ratio varies from property to property, from crude type to crude type, and from sale to sale.

Bidder/Purchaser Issues and Concerns with the Current Wyoming Crude RIK Program

As a part of our overall assessment of the success of the Wyoming crude oil royalty in kind program (pilot), the universe of known potential bidders and former bidders/purchasers were contacted via telephone to solicit comments on the program, and their specific issues and concerns with the program to date. Respondents to this solicitation were:

Cenex Harvest States	Marathon Ashland Oil LLC
Conoco	Continental Resources
Devon Energy	Eighty-Eight Oil
EOTT Energy	Equiva Trading
Exxon Company, USA	Frontier Oil and Refining
Koch	Trans-Canada
Plains/Scurlock	TEPPCO
Western Gas Resources	

Not all of the above companies actually bid on RIK properties. Only seven of these companies were winning bidders.

The companies' issues and concerns can be characterized as follows:

1) The number one voiced concern was the surety issue, either by the posting of a bond, or securing an Irrevocable Letter Of Credit (ILOC). Companies felt the requirements were too burdensome, or that the requirements for larger companies put smaller companies at a disadvantage from a cash flow perspective. The short time span allowed for the return of ILOC's was a concern.

2) Many respondents voiced opposition to the Federal "contractor" requirements/stipulations on grounds that they were too burdensome.

3) Some voiced concern over the requirement for a company seal/stamp on the bid, feeling this was unnecessary, and many times respondents to a bid had no knowledge of or access to a specific corporate seal.

4) Some professed an inability to understand what we were offering for bid, i.e., in what manner we wished the response. The alternative methodologies offered confused bidders thereby affecting the number of bids.

5) Some merely have not had the appetite for the crude in the area offered.

6) Some expressed concerns about assurances of transportation status, i.e., trucked, piped or otherwise. The MMS did not provide sufficient data for bidders to determine which leases were trucked as opposed to being connected to pipes.

7) One company indicated they would never bid again because they were being audited and demands were being made for materials they felt should not have been made, given the stated objective and/or purpose of the program, i.e., no pricing disputes. They felt that the MMS had shifted the administrative burden from the lessees to the purchasers and was not utilizing standard industry practices.

Obviously, most complaints were related to administrative issues surrounding the preparation for delivery of crude. None of the parties surveyed, excepting as per item 7) above, conveyed the sense that the problems/concerns/issues were insurmountable from the standpoint of excluding them from bidding.

The MMS has attempted to determine the specific company concerns raised in item 7). The best the MMS can determine, the company received inquiries concerning production balancing problems. Production balancing issues occur regardless of whether the royalties are being paid in kind or in value. The MMS is working with industry in developing standard industry practices related to RIK oil production balancing. Regardless of the method selected to fulfil the lease's royalty requirements, there will continue to be contact between the MMS and the lessee or purchaser. Questions concerning the accuracy of reported information (e.g., volumes) can only be resolved by communication with the appropriate party.

The MMS and the State of Wyoming have taken actions to improve the bidding and reporting process throughout the pilot. All efforts are taken not to discourage bids because that is counterproductive to the program's intent. Each successive round of bidding has included improvements based upon comments and analysis of previous sales. One specific correction is the revision of the sales contract to eliminate burdensome and unnecessary requirements. There will always be some need for contact with the RIK purchaser and lessee, particularly when there are questions about production balancing and volumes. Further improvements to the process are still needed.

MMS Cost of Administration

The MMS' Minerals Revenue Management (MRM) maintained detailed costs by land category and state for Net Receipts Sharing calculations. Fiscal year 1998 was the last year that detailed records were available. For Wyoming, the MRM incurred costs of $8.1 million for administering royalties in FY 1998. The costs by function are presented in Table 1.

MMS/MRM
Costs Associated with Wyoming FY 1998

Accounting & Reporting		Compliance Verification	
Royalty in Kind	$259,337	AFS/PAAS Comparisons	$567,096
Reference Data	594,840	Royalty Rate Reductions	23,946
Document Processing	95,059	Late Payments	172,489
Prod. Error Correction	260,281	Financial Term Exceptions	185,190
Royalty Error Correction	163,812	Adjustment Monitoring	42,078
Disbursements	7,796	Royalty Rate Monitoring	30,896
Cash Application	292,206	Allowance Exceptions	46,422
Administration	496,897	RMP Overhead	792,458
RMP Overhead	1,160,809	Administration	295,838
Total	**$3,331,037**	**Total**	**$2,156,413**

Royalty Valuation		Audit	
Oil & Gas	$162,086	205 Contract	$864,968
Solid Minerals	236,224	State & Indian Office	282,735
Administration	108,414	Administration	81,950
RMP Overhead	286,056	RMP Overhead	248,883
Total	**$792,780**	**Total**	**$1,478,536**

Document Control	
Document Control	$156,576
Administration	57,156
RMP Overhead	125,725
Total	**$339,457**
Grand Total	**$8,098,223**

Table 1

The processing of coal royalties is performed essentially separate from the oil and gas process. As can be seen from the number of royalty lines processed, the costs associated with processing coal royalties are relatively small. Less than 1 per cent of the royalty reporting lines processed are associated with coal, though direct costs associated with solid minerals within the State of Wyoming were approximately $250,000 in FY 1998. With administrative support and other costs not specifically referenced, total costs for solid minerals royalty administration in the State of Wyoming are in the $500,000 to $1,000,000 range.

Figure 4. presents data for Federal quantities and royalties by product type and from Wyoming for FY 1998. The approximate number of royalty lines processed by MMS to collect these royalties are also presented.

Using the high end of the estimated cost ($1,000,000) associated with solid minerals leaves a cost in excess of $7 million for administering oil and gas leases in Wyoming. Approximately 3 times more royalty lines are processed for gas than oil, and about three times more gas production occurs when measured in barrels of oil equivalent (BOE). Using this measurement, the MRM expended between $0.40 - $0.45/BOE in FY 1998. MRM's cost of administering oil royalties in Wyoming is in the range of $1.72 - $1.93 million.

Federal Royalties
State of Wyoming
Fiscal Year 1998

Commodity	Royalty Value (Millions)	Royalty Lines	Royalty Quantity	Quantity: Barrels of Oil Equivalent
Coal	$170.8	3,060		
Oil	51.9	126,000	4,291,730	4,291,730
Gas	140.3	379,000	76,264,870	11,370,262
Total	$363.0	508,060		

Figure 4

The MRM is still developing a process to manage royalties taken in kind. Steps in this process include:

- Developing a manual process that includes gathering information concerning oil production that does not exist elsewhere in the system,
- Simplifying the royalty reporting and collection process for industry and the MRM (The amount of royalty lines processed has been reduced about 80 percent by the taking of production in kind),
- Simplifying the valuation component of the royalty equation by removing much of the expense associated with the collection of royalties, and
- Revising the process to reconcile production in a much-shortened timeframe.

The estimated costs for the new RIK process can not be made at this time because the process is not final. The MRM is implementing a new RIK reporting scheme. It is simpler than the current reporting requirements. This change and other process improvements should continue to further reduce the cost of RIK administration. The MRM is also streamlining the reporting requirements for royalties collected in value, so the basis for any administrative cost comparison will change in the future.

Industry Cost of Administration

The industry performed an analysis of lessees' administrative costs associated with reporting and paying MMS royalties in value. The purpose of this evaluation was to identify and evaluate potential administrative savings to industry associated with the MMS taking its royalties in kind. The framework for the administrative cost analysis was the Benchmarking Survey of Domestic E&P Accounting Organizations conducted by the American Petroleum Institute. This survey includes the largest Federal lessees in the United States. The industry analysis only reviewed costs associated with the reporting of royalty by the lessee. The reporting costs incurred by RIK purchasers under the RIK program were not calculated.

The industry analysis determined that a lessee incurs an average administrative cost of approximately $2,400 per year to report and pay MMS royalties for each oil lease paid in value. These costs may vary depending on the size of the company and the complexity of its operations. The analysis also concluded that a lessee could potentially realize administrative savings of approximately $1,700 per year for each oil lease permanently taken as RIK. For the pilot period, this would have equated to savings of up to approximately $191,500, based on the average of 75 common properties included in the pilot program. Almost one half of the potential savings would be achieved from reduced audit and regulatory compliance efforts resulting from decreased MMS audits and disputes over valuation.

This evaluation recognizes industry will not fully realize any of the potential administrative savings until the MMS makes the pilot project a permanent program. Industry cannot re-assign personnel on a permanent basis until the pilot decision becomes final.

MMS Reconciliation Procedures

The MMS developed a spreadsheet application to reconcile RIK reported volume, price, or gravity differences. One MMS staff person was involved in the reconciliation process. That person estimates that approximately 565 hours over a period of 10 months were charged to work performed concerning the generation, tracking and reconciliation related to Phase 1a exceptions. The resolution process for Phase 1b and 1c exceptions had not begun at the time of the writing of this report.

In order to resolve discrepancies, the MMS used a process very similar to its existing reconciliation process for resolving production and royalty volume differences. Imbalance differences were reconciled in accordance with the procedures outlined in the Invitation for Bids, the RIK Purchaser Contract, and the Dear Operator letter. The reconciliation status as of August 9, 2000, is summarized below.

By March 9, 2000, 61 of the 95 resolved exceptions had been put into 11 different resolution categories. In only one case was an incorrect API gravity and price submitted

on the royalty report by the purchaser that necessitated a correction of the royalty value. All other exceptions were resolved by correcting previously submitted data but did not require a correction of the royalty value.

During the process of analyzing the data for this report, the MMS identified $11,500 in underpaid royalties on Federal leases for December 1999 for one purchaser (Phase 1c).

The administrative cost of reconciling reporting errors is minimal. To date, the reconciliation efforts have resulted in negligible collection of additional royalties from leases for which oil was taken in kind. This simply reflects that the in kind process provides greater accuracy and certainty in the payment of royalties. Utilizing the existing reconciliation process may not be meaningful for RIK.

Early Payment Bonus

Royalty payment requirements are part of the RIK contract. Under the terms of the pilot contracts, the RIK payments are received 5 days earlier than required under the in value regulations. Using the MMS' standard late payment interest rate and the average monthly volumes received during the pilot, the MMS estimates approximately $1,000/month was realized by selling oil production in kind.

Reporting Requirements

Reporting and paying royalties under an RIK program is a much simpler process than under in value royalties. Under the Wyoming pilot, RIK crude oil purchasers reported and paid to MMS using a streamlined reporting worksheet requiring fewer lines and reporting fields (Attachment 7). While the RIK sales process involves certain procedures unlike those under the in value way, payment of royalties in value entails more administrative processes following the actual sale of the product.

In Value Royalties

In value payment of royalties involves completion and submittal of a Report of Royalty and Sales Remittance, Form MMS-2014 (2014). For reporting monthly sales of oil, the 2014 requires completion of multiple fields (a minimum of 12) and a separate reporting line for each Accounting Identification Number (AID) and selling arrangement (SA). Those fields are: AID, product code, SA, sales month, transaction code, sales quantity, quality measurement, calculation method, sales value, royalty quantity, royalty value, and payment method. If there is more than one payor for the lease or AID, each payor must submit an individual 2014. For out-of-pocket transportation costs, the payor must report a separate transportation allowance line for the AID/SA combination. To report adjusted lines, the payor must report a reverse, or back out line using another code (adjustment reason) to void the original line and also a new corrected line.

During the first three sales under the Wyoming Oil RIK Pilot, a total of 271 properties participated. The MMS determined that 33,049 lines were reported for all Federal

properties in the Big Horn and Powder River Basins. This includes adjustments and transportation allowance lines. Each property may have one or more report entity. By determining the number of report entities for the properties in each phase over the 18-month span of the three pilots, the MMS estimates there would have been 10,211 lines reported for those properties. (See Figure 5.)

In Kind Royalties

Wyoming oil RIK pilot reporting was much simplified from in value reporting. The reporting format outlined in the Royalty Oil and Gas Purchase System form (Attachment 7) requires only four fields for completion – quantity of RIK oil purchased, unit price, API gravity, and sales month. On this MMS created spreadsheet application, the purchaser must only report one line per property instead of reporting lines for each AID/SA. Adjustments require additional lines. The form contains electronic macros that automatically prepare the 2014, including allocation of royalty data to all leases participating in the property, and a 2014 transmittal letter. While MMS must still process 2014 lines for in kind reporting, the purchaser is subjected to significantly less reporting burden and valuation scrutiny than the lessee under an in value scenario. Due to the constraints of the MMS' current systems, reporting burdens are imposed on the oil purchaser. Evolution of the systems to support in kind activities could further reduce this burden.

For the first three sales under the Wyoming pilot, purchasers reported 2,116 lines. This is based on 97 properties under the first sale (97 lines per month x 6 months), plus 108 properties for the second sale (108 lines per month x 6 months), plus 66 properties for the third sale (66 lines per month x 6 months), plus 490 adjustment lines. Compared to 10,211 lines, in kind reporting for the Wyoming pilot represented savings of 8,095 lines or a 79.3% reduction in reporting lines. Based upon MMS' analysis of information collection costs of its royalty reporting form (Form MMS-2014), the cost of electronic reporting is approximately $2.50/line. Based upon the reduction in lines (8,095) reported, this amounts to a savings of $20,238 for the Wyoming RIK properties.

The reported line savings are summarized in Figure 5.

Reported Lines – Royalty In Kind

Phase	Number of Properties	Lines for All Sales Period	Adjusted Lines	Total Lines for Evaluation Period
1a	97	582		
1b	108	648		
1c	66	396		
Totals	271*	1,626	490	2,116

*222 common properties, 49 new properties between sales

Potential Report Lines – Royalty In Value

Phase	Number of Properties	Report Entities	Potential Report Lines – Original and Modified
1a	97	310	2,563
1b	108	474	3,919
1c	66	451	3,729
Totals	271	1,235	10,211

For the 6 months prior to Phase 1a (April – September 1998) a total of 33,409 lines (23,790 original + 9,079 modified) were reported for all Federal properties in the Big Horn and Powder River Basins – 1.378 lines/report entity.

Figure 5

RIK Bidder Qualification

Unlike in value royalty payments, sales of royalty crude oil to winning bidders requires a qualification process before the bids can be awarded. That is, potential purchasers must demonstrate that they have the financial solvency or credit worthiness to guarantee that they will not default on payment for RIK purchases. Under in value, the royalty obligation of the lessee is generally covered by the lease bond, or merely by the trust that has developed over the years under the lessee/lessor relationship. The bidder qualification process contributes significantly, not only to the administrative cost of running an RIK program, but also to the pricing amount offered by bidders. Following is a short discussion of the bidder qualification process.

Sales of royalty oil to qualified purchasers began as early as the 1970's with the small refiner program. Credit requirements for small refiners since that time have been based on posting a surety instrument in an amount equal to the 99 days worth of production. Under the small refiner oil sale regulations at 30 CFR 208.11, MMS-acceptable surety instruments have been: (1) an MMS-specified surety bond, (2) an irrevocable letter of credit (LOC), or (3) a financial institution book-entry certificate of deposit. [Similar requirements were used for staying payments for issues under appeal at 30 CFR Part 243, up until 1999.]

The common feature of these instruments is that each of them ties-up a sum of money by the purchaser to guarantee payment of 99 days worth of oil. Because of this obligation, these types of credit assurances are more costly. The most common instrument used over the past two decades for the small refiner program has been the LOC.

No data is available for the per-barrel costs of surety bonds or COD's. However, we have been informed by small refiners that LOC's cost as much as $0.09-$0.10 per barrel. Consequently, small refiners claim that this cost is necessarily reflected in the amount bid for MMS crude oil supplies. Therefore, MMS obtains a guarantee of payment, but receives a lower bid for its oil. This burden has also been an impediment to otherwise interested buyers from participating in the program altogether.

With the advent of new initiatives for selling the government's royalty share of production beyond the arena of small refiners, MMS has expanded the options for determining credit worthiness. Furthermore, the appeals regulations at 43 CFR were revamped to allow companies to "self-bond" or "self-certify," that is, demonstrate financial solvency without posting a bond or LOC. Under 30 CFR 243.201, a company is deemed financially solvent if their net worth, minus the amount MMS would have required for surety, is greater than $300 million. If their net worth is less, the company's credit worthiness must be determined by MMS.

Under the RIK pilots for selling natural gas in the Gulf of Mexico, the MMS evaluated a company's credit worthiness by reviewing audited financial statements and Dunn and Bradstreet's credit ratings.

For Wyoming RIK sales during the 18-month evaluation period, the standard method for guaranteeing payment was the LOC. Under the latest Wyoming oil sale (phase 3), MMS followed the appeals rule guidelines and gas pilot practices by allowing companies to self-certify in lieu of providing an LOC. However, for the subsequent competitive Gulf Oil sale, MMS allowed self-certification only for companies with net worth exceeding $300 million. No analysis has been performed to determine the effect of self-certifying on bid amounts.

Another alternative to assuring payment for sales of RIK production is credit insurance. Credit insurance is generally much cheaper than LOCs or bonds but works in much the same way. The University of Texas has had experience in this area for its 3,500 barrels per day of oil production from State grant lands. The University pays the premiums for its buyers to guarantee payment for its sales of royalty oil. The University's costs were higher at the beginning of the program but have decreased with experience, familiarity with the buyers, and developing trust. The current costs are about $18,000 per year, or about $0.014 per barrel. The MMS investigated this alternative further and decided it was not viable as the one company issuing this type of insurance was not willing to accept the liability.

Appeals and Litigation

For in value royalties, administrative oversight and management of the valuation process add costs. Regulations must be written to provide procedures and methods for valuation. In value payments must be audited, valuation determinations must be researched and developed, and disputes typically follow, causing years of uncertainty for the lessee and lessor. These disputes can lead to administrative appeals, district court litigation, and appeals court litigation. Using estimated data from the cost/benefit analysis for the Federal oil rule, appeals and litigation costs for the18-month evaluation period, had the oil been under in value, would be $112,500. [$5M for oil appeals/litigation annually nationwide x Wyoming's 6 per cent share of Federal oil production x 1.5 for the 18-month period x 25 per cent for the portion of RIK production taken in Wyoming.]

Audit Costs

Audit costs for the Wyoming production taken in kind during the evaluation period should be less than if royalties were paid in value. The audit process for RIK should be simpler. Additionally, one of the major components of the royalty equation – Value – has been set by the RIK contract.

Addendum

In response to the draft evaluation of the Wyoming Oil RIK Pilot, MMS received comments from two parties (see Attachments 8 and 9). A third party in a public forum also made comments. The MMS reviewed these comments and provides additional information to the report. This addendum discusses the larger issues received in those comments.

Benchmarks

An issue was raised as to what is an appropriate benchmark for the RIK oil program in Wyoming. The comments received equated to a need to compare RIK sales in Wyoming to published Canadian pricing and to compare RIK sales to a methodology under the MMS' revised oil valuation regulations, which went into effect on June 1, 2000. The initial evaluation period was prior to the implementation date of the regulations. One of the barriers in developing a benchmark for the Wyoming area (whether for RIK sales or for monitoring royalties in value) is there are no available transparent pricing indicators in the area. Unlike the Gulf of Mexico area, where many indices are published daily, the Wyoming area contains one index with disputed reliability.

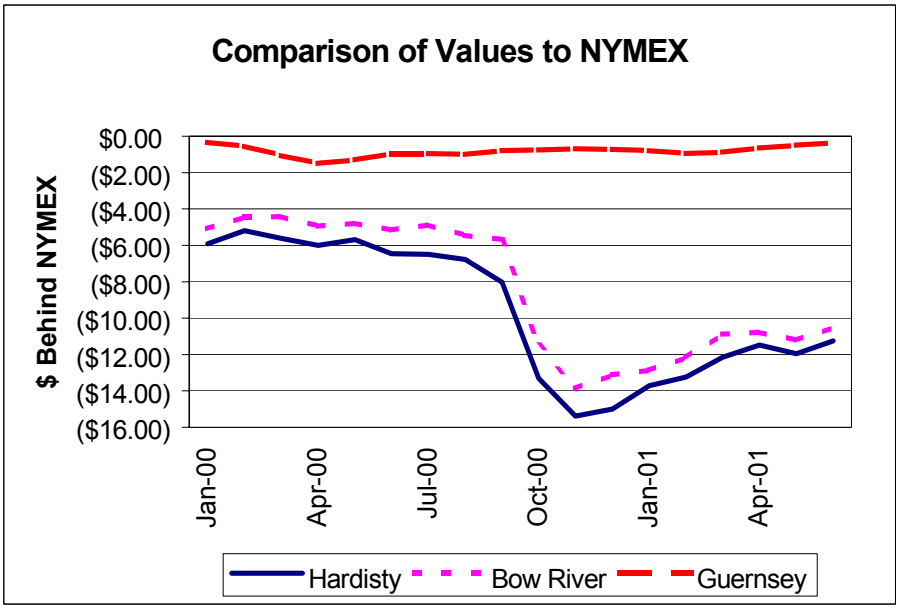


Chart 1

Chart 1 is a comparison of various prices to the NYMEX. Platt's index at Guernsey, Wyoming, is for sweet crude oil. Platt's index at Bow River and Koch's posting at Hardisty are for Canadian sour and heavy crude oils respectively. Platt's does not publish an index in Wyoming for sour oil. The Guernsey index shows some relationship to the NYMEX price, in that it generally follows the NYMEX price, albeit by a varying amount each month. Other non-transparent factors affect the local market causing the variations.

The Bow River and Hardisty prices for Canadian sour and heavy crude oils differ greatly from the NYMEX, by a varying amount month to month. The prices for sour and heavy crude oils do not maintain a direct relationship with NYMEX or the Guernsey index for sweet oil, as other non-transparent factors affect the market for such crude oils. Thus, a comparison of Platt's Guernsey index or NYMEX to Wyoming sour crude oil is not provided in this analysis.

Oil Valuation Regulations as a Benchmark

In developing the oil valuation regulations, the MMS stated that the Wyoming area for oil valuation is unique. As such, MMS developed a different methodology for valuing non-arms-length oil produced in Wyoming than the remainder of the country. The revised regulations (effective June 1, 2000) for non-arms-length Wyoming production without an approved tendering program provide for valuation as a result of:

- The average of a lessee's gross proceeds in the field or area, or
- The average of daily spot prices for crude oil at Cushing (for West Texas Intermediate (WTI), adjusted for location, quality, and transportation) during the trade month concurrent with production.
  Discussion was provided in the comments that MMS should use a method similar to the regulatory method used elsewhere in the country. MMS made such comparisons for sweet crude oil for benchmark purposes. MMS made a comparison using the benchmark of:
- A netback from Cushing to Guernsey (Platt's WTI index at Cushing less the Platt's differential between Cushing and Guernsey). This is the same as the Platt's published index for Guernsey.

In using the Guernsey index, MMS noted substantial debate existed as to whether the Guernsey index is a highly liquid (active) market center, thus questioning the use of this index as a reliable benchmark for value. The Guernsey index is for sweet crude oil. MMS compared the RIK sales of sweet crude oil from the Powder River Basin, adjusting them for quality and transportation to Guernsey, versus the Platt's index for WTI at Cushing, adjusted to Guernsey. RIK sales were adjusted for the gravity differential between the points, and the cost of transportation from the lease to Guernsey. A differential between Cushing and Guernsey was used to adjust the Platt's at Cushing to Guernsey. This methodology is a proxy for the option provided in the oil valuation regulations. The comparison is provided in Chart 2 with the $0.00 line representing the Platt's index as adjusted.

In the 24 months reviewed, the RIK value exceeded the oil valuation rule's proxy price in 19 months, by a netted average of $0.426 per barrel for the 24 months. In making such comparisons, it should be noted that the index is a monthly spot price and RIK sales in Wyoming are for six-month terms. MMS offers the caveat that this is for benchmark purposes only.

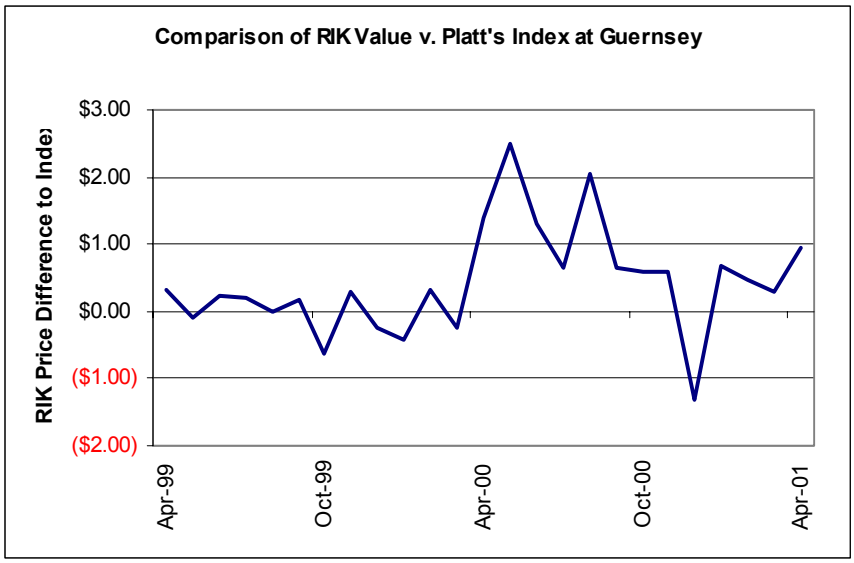


Chart 2

Canadian Pricing as a Benchmark

MMS discussed pricing methodologies with producers in the area and found that there was no consensus of a single best method to sell crude oil in Wyoming. Some producers sell crude oil on both Wyoming and Canadian pricing methods as a way of mitigating pricing risk.

As a result of the MMS' continual review of its sales and comments received, MMS has offered its RIK crude oil from Wyoming on a Wyoming posting and a Canadian pricing basis. The Wyoming market traditionally is a posting plus premium market. However, there are no published sources or transparency of the premiums offered. As seen in the discussions below, Canadian pricing appears to be more volatile than Wyoming postings. Future comparisons of the pricing methods will be monitored.

In the initial draft report, MMS stated that the Canadian prices were not a reliable benchmark for the RIK oil production over the report's 18-month period, but that MMS would continue to analyze those prices for possible future use. Based on our continuing work, MMS concludes Canadian pricing is a benchmark, but due to differences in the Canadian and Wyoming market, it is not always the most advantageous method in Wyoming. MMS' conclusion from the analysis and sales methodologies is that Canadian pricing is obtainable for Wyoming sour crude oil, but is not necessarily the best price received at any point in time. There is associated price risk with any pricing method picked, relative to another methodology. This is the same dilemma producers' face and is reflected in royalties received in value.

Sweet Crude Oil Comparisons

Chart 3 provides a comparison of sweet oil indices - Canadian PAR (the $0.00 baseline) and Guernsey - both as published by Platts. The relationship between the indices varies each month during the 24-month analysis period. This illustrates that prices in Wyoming

do not have a simple mechanical link to Canadian PAR and do not allow a simple netback of prices.

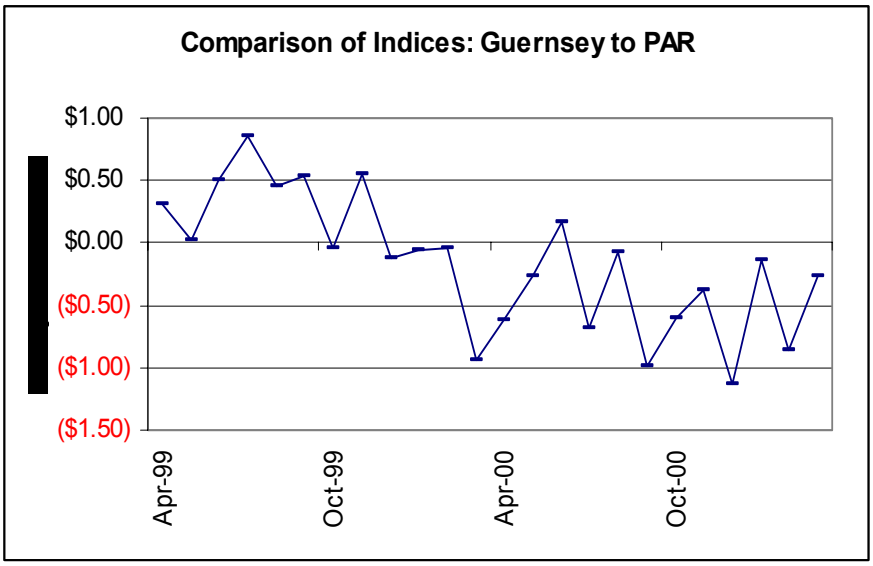


Chart 3

We compared the RIK sales of sweet crude oil from the Powder River Basin, adjusting it for quality and transportation to Guernsey, versus the Platt's index for Canadian PAR (the $0.00 baseline) at Edmonton, adjusted to Guernsey. The comparison is illustrated in Chart 4. In the 24 months reviewed, the Canadian PAR netback exceeded the RIK value in 13 months, by a netted average of $0.552 per barrel.

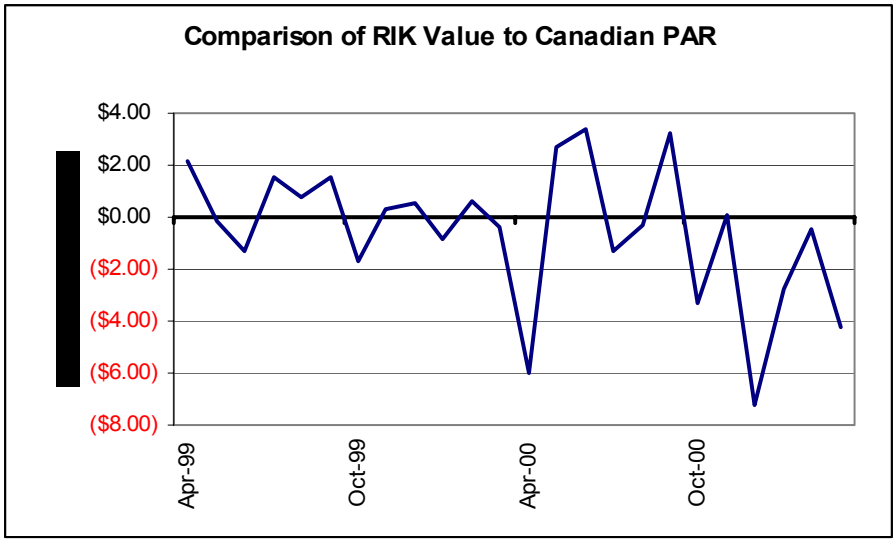


Chart 4

In making such comparisons, it should be noted that the index is a monthly spot price and RIK sales in Wyoming are for six-month terms. Again, MMS offers the caveat that this is for benchmark purposes only. In making such comparisons, it is questionable whether producers in the Guernsey area can actually obtain a price simply based on PAR plus transportation to Guernsey. In subsequent sales, the MMS requested bids for sweet oil based on Canadian pricing; no bids were received on this basis. For sour crude oil however, bids are received on a Canadian pricing basis.

Discussion was provided in the comments as to the unreliability of posted prices in valuing oil in Wyoming, and that Canadian pricing should be used. It should be noted that published prices in the Canadian market are based upon an average of posted prices. The published prices for Canadian crude are at market centers located in Canada close to the producing zones. Wyoming production is downstream of those market centers and cannot physically access the Canadian market centers. We find there is no transparency in valuing the differences of pricing in Canada to that of Wyoming.

Sour Crude Oil Comparisons

As shown in Chart 1 above, MMS sees no relationship between pricing for sour crude oil relative to the Guernsey or Cushing indices. MMS did make comparisons of Canadian pricing for sour crude oil to the Wyoming market centers for the respective crude oil type.

Asphaltic Crude

For asphaltic crude oil, MMS used Canadian Bow River at Billings, Montana. Billings is a primary refining center for asphaltic crude oil and uses Wyoming and Canadian crude oil. Comparisons were made comparing RIK values for Pitchfork asphaltic received at the lease, adjusted for quality and transport to Billings. Bow River pricing was adjusted for quality and transport to Billings. The comparison is shown in Chart 5 with the $0.00 line representing a Bow River baseline.

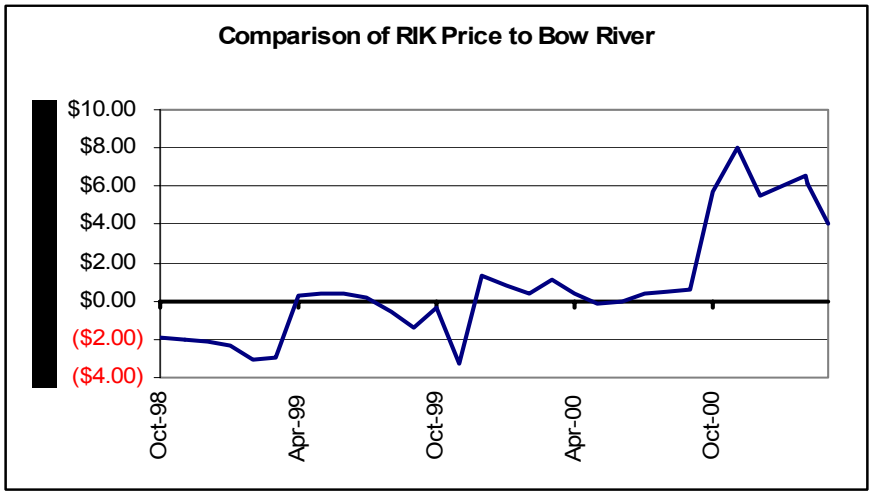


Chart 5

In the 30 months illustrated, the RIK value exceeded the Canadian Bow River netback in 18 months. For the 30-month analysis period, the RIK value exceeded the Canadian Bow River by a netted average of $0.749 per barrel. In making such comparisons, it should be noted that the index is a monthly spot price and RIK sales in Wyoming are for six-month terms. Again, MMS offers the caveat that this is for benchmark purposes only.

MMS routinely requests bids in sales on both a Wyoming and Canadian price basis. Bids are routinely received on both methodologies. Wyoming postings are bid with a premium. Wyoming postings do tend to follow NYMEX more closely than Canadian Bow River as exhibited in Chart 6 where the NYMEX price is represented by the $0.00 baseline.

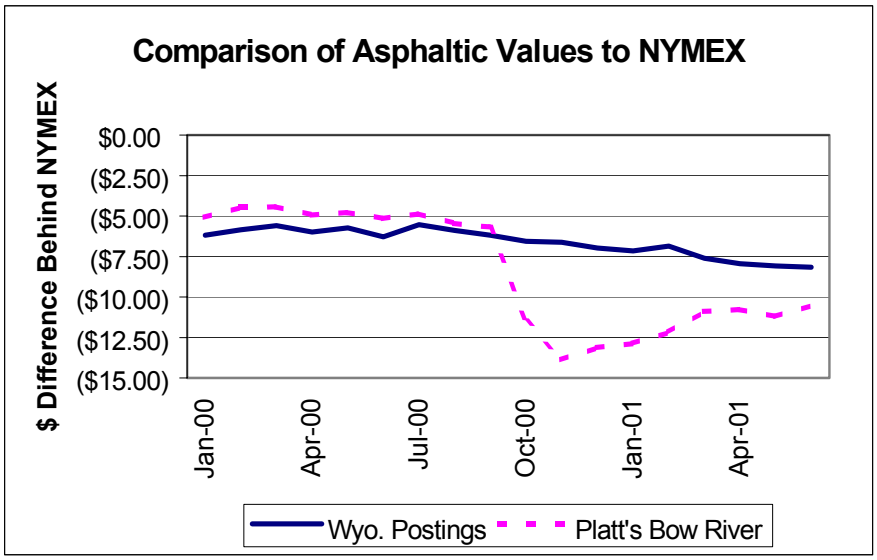


Chart 6

MMS has made further comparisons of the RIK values received for asphaltic crude oil against rejected bids received on a Canadian pricing basis. If the Canadian prices are generally the highest benchmarks, then comparisons of RIK sales against Canadian pricing methods should show the wrong choice was made in accepting the Wyoming based pricing methods. During this period, the accepted Wyoming based prices were higher than the rejected bids on a Canadian pricing method.

- For the period of October 1999 through March 2000, the RIK value received exceeded rejected bids on a Canadian basis by an average of $2.32 per barrel.
- For the period of April 2000 through September 2000, the RIK value received exceeded rejected bids on a Canadian basis by an average of $1.81 per barrel.
- For the period of October 2000 through March 2001, no bids were received on a Canadian pricing basis. As seen in Chart 5, there was a large spike in the value of the RIK price received against a Bow River netback price.
    - When the Bow River price dropped substantially, relative to the NYMEX and the Wyoming postings (see Chart 6), the RIK sales benefited by not being on a Canadian pricing basis. With the resulting market changes, the

6-month term sale allowed the MMS to capture this benefit for the 6 months.

- For this period, had RIK sales been using a Canadian Bow River price, the MMS would have received less royalty. The RIK sales unit price exceeded the Bow River price, adjusted to Billings, by $5.73 per barrel.

For general sour crude oil, MMS compared Canadian Bow River prices to RIK prices received at the lease. Both were adjusted for quality and transport to Casper, Wyoming. The comparison is shown in Chart 7. The Canadian Bow River netback exceeded the RIK value in 25 months. For the 36-month period presented, the Canadian Bow River exceeded the RIK value by a netted average of $0.507 per barrel. In making such comparisons, it should be noted that the index is a monthly spot price and RIK sales in Wyoming are for six-month terms. Again, MMS offers the caveat that this is for benchmark purposes only. MMS routinely requests bids in sales on both a Wyoming and Canadian price basis. Bids are routinely received on both methodologies. The Wyoming market traditionally is a posting plus premium market. Canadian based pricing, offered in Wyoming, is at a decrement.

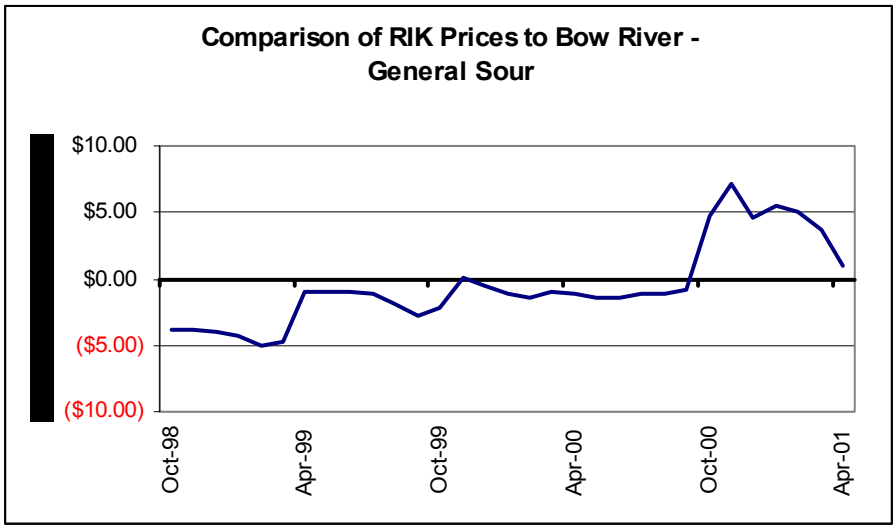


Chart 7

MMS has made further comparisons of the RIK values received for general sour crude oil. MMS made comparisons against rejected bids received on a Canadian pricing basis.

- For the period October 1999 through March 2000, the RIK value received exceeded rejected bids on a Canadian basis by an average of $1.55 per barrel.
- For the period April 2000 through September 2000, the RIK value received exceeded rejected bids on a Canadian basis by an average of $2.30 per barrel.
- For the period October 2000 through March 2001, there were no bids received on a Canadian pricing basis. Similar to the discussion above for asphaltic crude oil, the MMS benefited during the period October 2000 to March 2001 by not using a Canadian pricing basis.

The result of the comparisons is that RIK values based on Wyoming pricing can exceed or be less than Canadian pricing in any given month. This illustrates that there is not a single link (i.e., transportation) to the pricing in the area - there are other non-transparent links or market factors in the local market place.

Royalty in Value Calculations

Comments received questioned the methodology of trying to compare RIK sales to what royalties would have been received had the properties remained in value. MMS made the same qualifications when we made this comparison in the report.

The basic problem with this comparison is that it is retrospective. "Audited" royalties in value are not known within a useable timeframe after production. For instance, at the time of writing of the initial Wyoming pilot report for the 18 month sales period, auditors had not completed their reviews for surrounding properties and could not provide a value for comparison purposes. This is why MMS made comparisons to Wyoming State severance tax data - because it was available.

With the lack of "actual audited" royalties in value, MMS used a proxy for royalties in value, which led MMS to its benchmark review stated in the report and above.

Type of Bidders

Discussion was provided on the type of bidders present for RIK sales in Wyoming, and whether the bidders provided a viable market. Particularly mentioned was the lack of major integrated refiners as bidders.

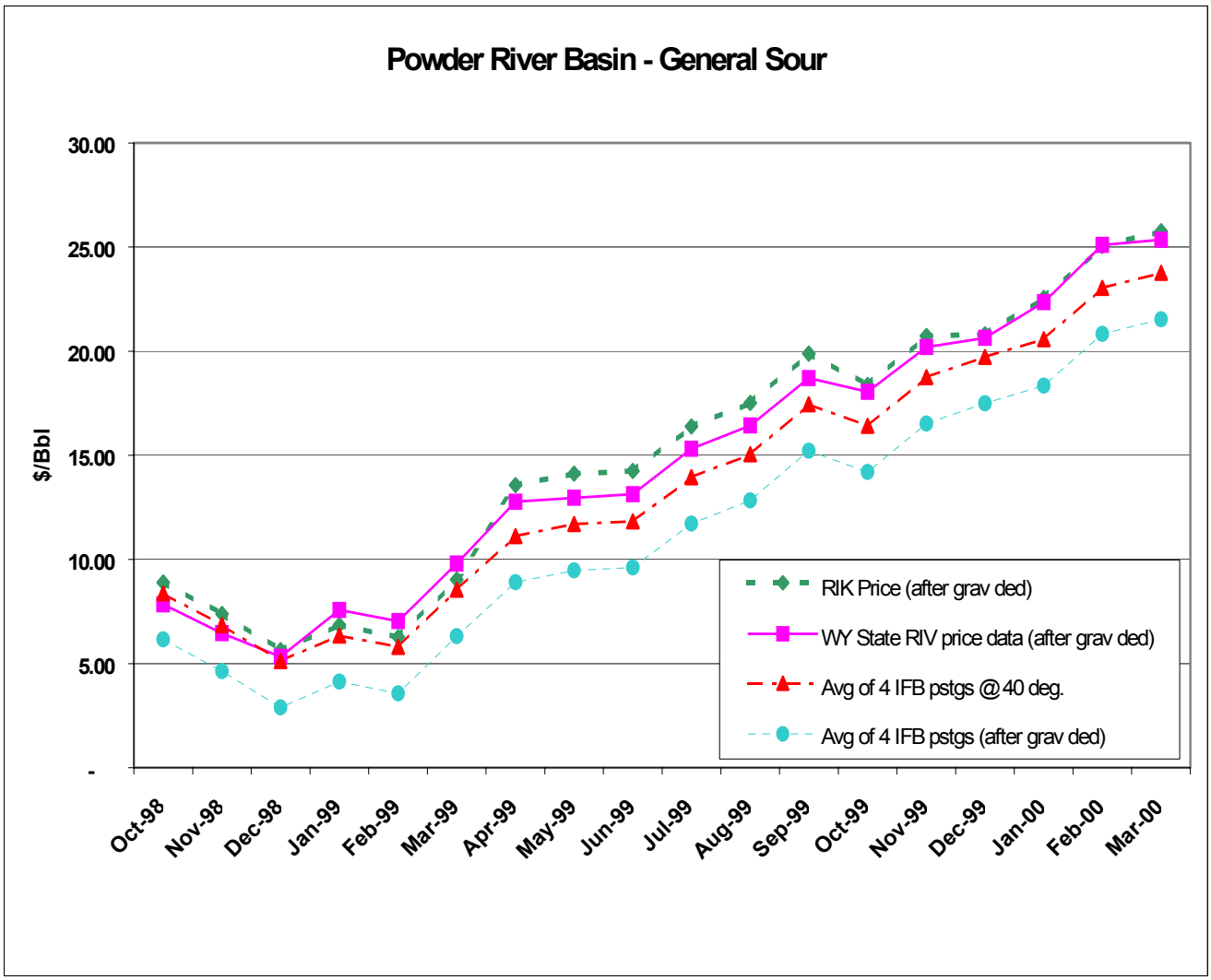
The RIK sales in Wyoming took place at the lease, requiring the successful bidder to aggregate production. Traditionally, in the Wyoming area, lease level aggregation is a function many refiners are not usually willing to perform. As such, aggregators or mid-marketers prevail in the Wyoming area performing this service.

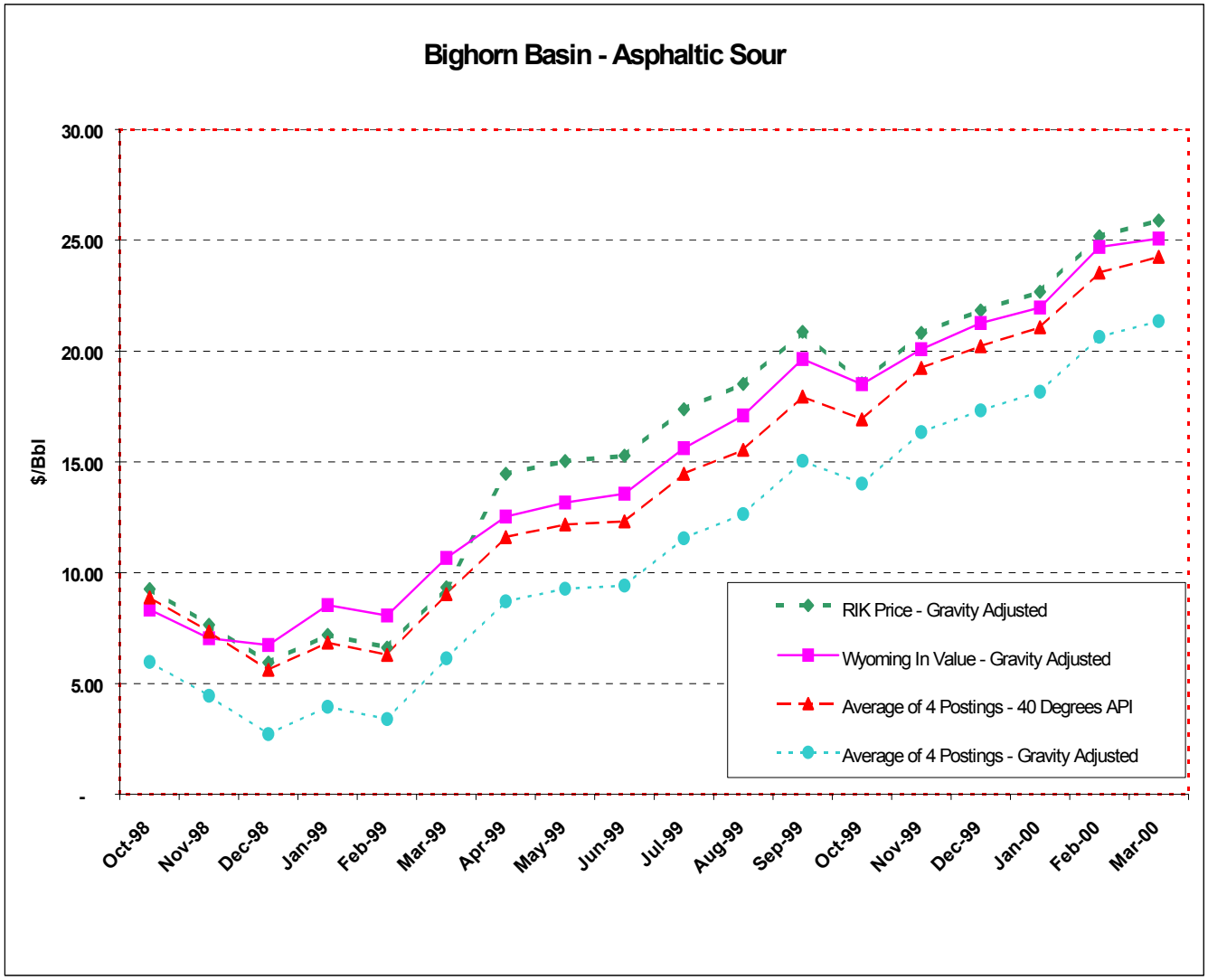
For further information, the local refiners in the Wyoming market place (excluding Utah) consist of one major integrated refiner, two intermediate integrated refiners, and five independent refiners. During the 18-month period, three of these refiners bid on production, one being a winning bidder. The Salt Lake City refining area consists of five additional refiners, currently only one being a major integrated refiner.

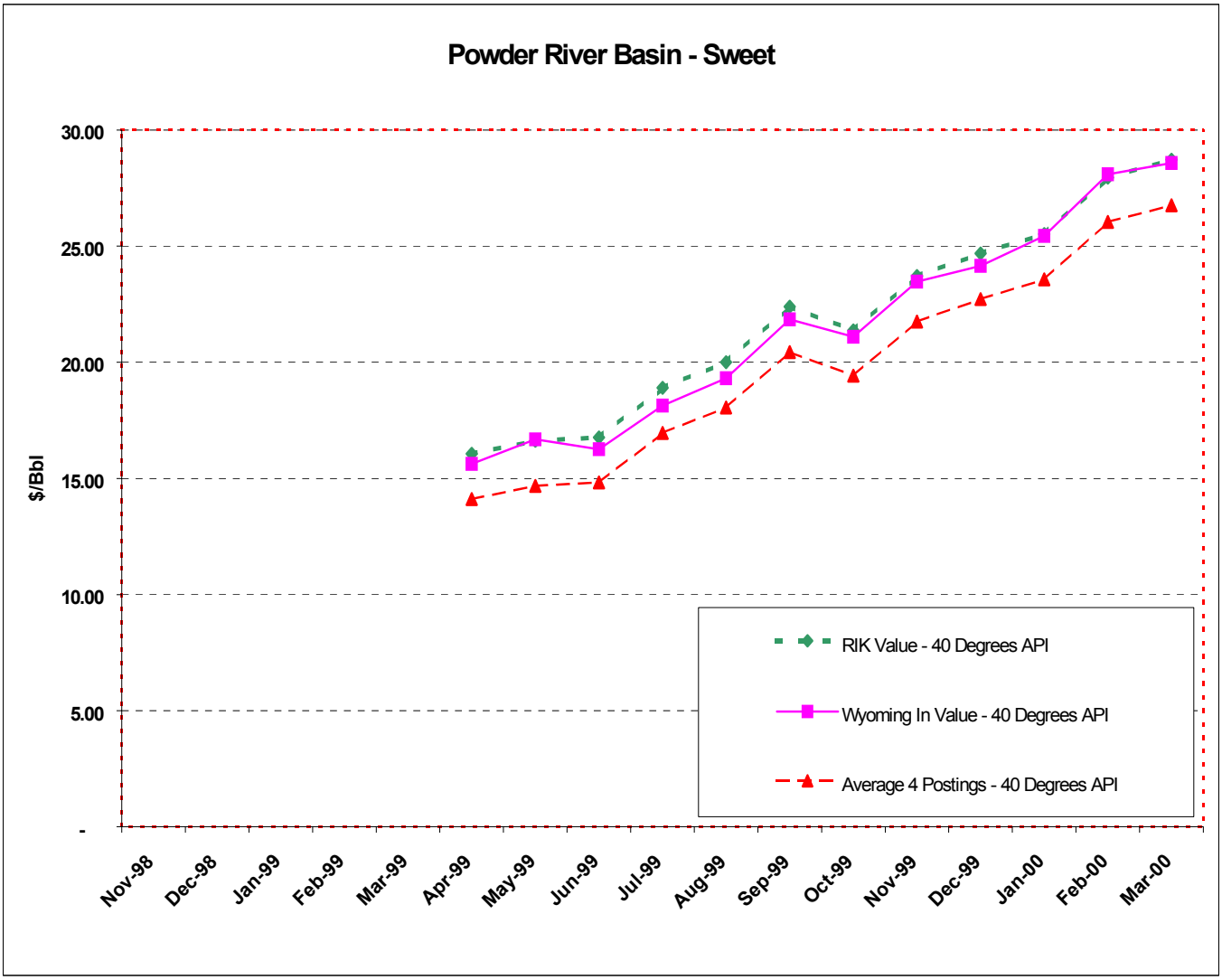
By comparison, in recent RIK sales in the Outer Continental Shelf area, most successful bidders were major integrated refiners.

MMS allows multiple ways to bid for the RIK crude oil. It allows bidding based on Wyoming postings, Canadian postings, or NYMEX. Bidders often bid using multiple methodologies allowing the MMS to choose the methodology they believe to be most advantageous.

Continuous comparisons of the differing pricing methods and benchmarks are made and evaluated by the RIK program prior to each sale.


Powder River Basin - General Sour
$/Bbl
30.00
25.00
20.00
15.00
10.00
5.00
-
Oct-98
Nov-98
Dec-98
Jan-99
Feb-99
Mar-99
Apr-99
May-99
Jun-99
Jul-99
Aug-99
Sep-99
Oct-99
Nov-99
Dec-99
Jan-00
Feb-00
Mar-00
RIK Price (after grav ded)
WY State RIV price data (after grav ded)
Avg of 4 IFB pstgs @ 40 deg.
Avg of 4 IFB pstgs (after grav ded)


Bighorn Basin - Asphaltic Sour
$/Bbl
30.00
25.00
20.00
15.00
10.00
5.00
-
Oct-98
Nov-98
Dec-98
Jan-99
Feb-99
Mar-99
Apr-99
May-99
Jun-99
Jul-99
Aug-99
Sep-99
Oct-99
Nov-99
Dec-99
Jan-00
Feb-00
Mar-00
RIK Price - Gravity Adjusted
Wyoming In Value - Gravity Adjusted
Average of 4 Postings - 40 Degrees API
Average of 4 Postings - Gravity Adjusted


Powder River Basin - Sweet
$/Bbl
30.00
25.00
20.00
15.00
10.00
5.00
-
Nov-98
Dec-98
Jan-99
Feb-99
Mar-99
Apr-99
May-99
Jun-99
Jul-99
Aug-99
Sep-99
Oct-99
Nov-99
Dec-99
Jan-00
Feb-00
Mar-00
RIK Value - 40 Degrees API
Wyoming In Value - 40 Degrees API
Average 4 Postings - 40 Degrees API

Attachment 4

Powder River Sweet

COMPARISON OF RIK PRICES RECEIVED
TO WYOMING TAX RECEIPTS
SUMMARY SCHEDULE OF VALUE AND PERCENTAGE DIFFERENCES

	Field 1		Field 2		Field 3		Field 4	
Apr-99	($0.50)	-3%	$1.02	6%	$0.42	3%	$0.85	5%
May-99	(0.52)	-3%	0.92	5%	0.31	2%	(1.14)	-7%
Jun-99	(0.56)	-4%	0.46	3%	0.33	2%	1.57	9%
Jul-99	0.16	1%	0.51	3%	0.32	2%	2.10	11%
Aug-99	1.85	10%	0.56	3%	0.20	1%	2.65	13%
Sep-99	(0.32)	-1%	1.05	5%	0.12	1%	2.79	12%
Oct-99	(0.18)	-1%	0.21	1%	0.03	0%	2.35	11%
Nov-99	(0.16)	-1%	4.60	19%	0.03	0%	1.84	8%
Dec-99	(0.18)	-1%	(0.02)	0%	0.01	0%	4.23	17%
Jan-00	0.29	1%	0.24	1%	0.27	1%	(0.12)	0%
Feb-00	(0.20)	-1%	(0.11)	0%	(0.02)	0%	(0.41)	-1%
Mar-00	(0.17)	-1%	(0.57)	-2%	0.07	0%	(0.20)	-1%

	Field 5		Field 6		Field 7	
Apr-99	($0.53)	-4%	($0.09)	-1%	($0.32)	-2%
May-99	(1.14)	-7%	(0.11)	-1%	(0.32)	-2%
Jun-99	(0.59)	-4%	(0.13)	-1%	(0.56)	-3%
Jul-99	(0.79)	-4%	1.09	6%	(0.15)	-1%
Aug-99	(0.65)	-3%	0.36	2%	(0.42)	-2%
Sep-99	(0.78)	-4%	(0.28)	-1%	(0.41)	-2%
Oct-99	(0.43)	-2%	(0.41)	-2%	0.05	0%
Nov-99	(0.40)	-2%	0.04	0%	0.13	1%
Dec-99	(0.40)	-2%	(0.54)	-2%	0.07	0%
Jan-00	(0.39)	-2%	(0.29)	-1%	0.62	2%
Feb-00	(0.62)	-2%	(0.06)	0%	1.02	4%
Mar-00	(0.99)	-4%	2.08	7%	0.58	2%

Note: Negative numbers ($) indicate that price received by Wyoming Revenue and Tax was greater than that received under RIK program bids.

Powder River Sour

COMPARISON OF RIK PRICES RECEIVED
TO WYOMING TAX RECEIPTS
SUMMARY SCHEDULE OF DIFFERENCES

	Field 1		Field 2		Field 3		Field 4		Field 5		Field 6		Field 7	
Apr-99	$1.34	10%	($0.05)	0%	$0.37	3%	$0.00	0%	$1.02	8%	$1.53	10%	$0.77	5%
May-99	1.30	10%	0.02	0%	0.54	4%	0.80	6%	4.83	35%	1.35	8%	0.79	5%
Jun-99	1.33	10%	0.05	0%	0.49	4%	0.89	6%	4.87	35%	0.95	6%	0.84	6%
Jul-99	(1.10)	-7%	0.05	0%	0.43	3%	1.02	6%	5.55	35%	0.42	2%	0.84	5%
Aug-99	0.49	3%	0.06	0%	0.34	2%	0.92	5%	5.05	30%	0.69	4%	0.81	5%
Sep-99	(1.07)	-6%	0.07	0%	0.34	2%	1.03	5%	5.88	30%	0.75	3%	0.78	4%
Oct-99	(1.32)	-7%	(0.28)	-2%	0.21	1%	0.48	3%	0.93	5%	0.20	1%	0.30	2%
Nov-99	(1.56)	-8%	(0.22)	-1%	0.11	1%	6.94	33%	0.04	0%	(0.04)	0%	0.30	1%
Dec-99	(1.63)	-8%	(0.23)	-1%	0.15	1%	0.66	3%	(0.43)	-2%	0.19	1%	0.28	1%
Jan-00	0.28	1%	(0.23)	-1%	0.22	1%	0.35	2%	0.03	0%	1.42	6%	0.48	2%
Feb-00	0.25	1%	(0.24)	-1%	0.21	1%	0.47	2%	(5.03)	-20%	0.35	1%	0.46	2%
Mar-00	0.27	1%	(0.25)	-1%	0.29	1%	0.71	3%	0.58	2%	0.07	0%	0.58	2%

	Field 8		Field 9		Field 10		Field 11		Field 12		Field 13		Field 14	
Apr-99	$1.06	8%	$0.77	6%	$0.00	0%	$0.28	2%	$0.88	6%	$0.97	7%	$4.21	31%
May-99	0.98	7%	0.64	5%	0.53	4%	0.46	3%	0.84	6%	0.97	7%	4.22	30%
Jun-99	1.02	7%	0.67	5%	0.67	5%	0.49	4%	0.83	6%	0.97	7%	0.80	6%
Jul-99	0.99	6%	0.83	4%	0.70	4%	0.44	3%	0.83	5%	0.99	6%	0.36	2%
Aug-99	1.08	6%	0.82	5%	0.65	4%	0.31	2%	0.89	5%	0.98	6%	0.15	1%
Sep-99	1.06	5%	0.85	5%	2.18	11%	0.11	1%	0.90	4%	0.98	5%	0.34	2%
Oct-99	0.72	4%	0.36	2%	0.25	1%	0.35	2%	0.32	2%	0.46	2%	0.25	1%
Nov-99	0.57	3%	0.46	2%	0.21	1%	0.51	3%	0.33	2%	0.43	2%	0.24	1%
Dec-99	0.54	3%	0.39	2%	0.20	1%	0.12	1%	0.30	1%	0.28	1%	0.41	2%
Jan-00	1.01	5%	0.81	5%	0.34	2%	3.20	14%	0.76	3%	0.25	1%	0.42	2%
Feb-00	1.13	5%	0.75	3%	0.38	2%	0.45	2%	0.68	3%	0.31	1%	0.50	2%
Mar-00	1.09	4%	1.12	4%	0.47	2%	0.33	1%	0.88	3%	0.34	1%	0.59	2%

	Field 15		Field 16		Field 17		Field 18		Field 19		Field 20		Field 21	
Apr-99	$1.28	9%	$1.02	7%	$0.53	4%	$1.60	11%	$0.89	7%	$0.30	2%	$0.43	3%
May-99	1.28	9%	0.89	6%	0.41	3%	1.47	10%	0.88	7%	0.29	2%	0.36	3%
Jun-99	0.60	4%	1.06	7%	0.55	4%	1.45	10%	0.91	7%	0.48	3%	0.50	4%
Jul-99	0.61	4%	1.44	9%	0.63	4%	1.45	9%	0.93	6%	0.39	2%	0.48	3%
Aug-99	0.64	4%	1.37	8%	0.52	3%	1.44	8%	0.91	5%	0.59	3%	0.48	3%
Sep-99	0.56	3%	1.41	7%	0.44	2%	1.41	7%	0.88	5%	0.42	2%	0.47	2%
Oct-99	0.68	4%	0.72	4%	(0.22)	-1%	1.00	5%	0.29	2%	(0.18)	-1%	0.16	1%
Nov-99	(0.34)	-2%	3.20	15%	0.27	1%	0.90	4%	0.28	1%	(0.21)	-1%	(0.01)	0%
Dec-99	(0.26)	-1%	3.69	17%	0.06	0%	0.83	4%	0.29	1%	(0.23)	-1%	(0.05)	0%
Jan-00	(0.28)	-1%	1.70	7%	(4.50)	-20%	0.77	3%	(0.07)	0%	(0.21)	-1%	0.32	1%
Feb-00	(0.29)	-1%	(1.50)	-6%	0.43	2%	0.81	3%	(0.06)	0%	0.07	0%	0.42	2%
Mar-00	0.54	2%	(1.45)	-6%	(0.31)	-1%	0.38	1%	0.01	0%	0.00	0%	(0.64)	-2%

Note: Negative numbers ($) indicate that price received by Wyoming Revenue and Tax was greater than those received under the RIK program bids.

Bighorn Basin Asphaltic Sour

COMPARISON OF RIK PRICES RECEIVED
TO WYOMING TAX RECEIPTS
SUMMARY SCHEDULE OF PRICE DIFFERENCES

	Field 1		Field 2		Field 3		Field 4		Field 5	
Apr-99	($0.51)	-4%	$1.00	9%	$0.31	3%	$2.01	13%		
May-99	(0.53)	-4%	0.71	6%	0.06	1%	2.26	14%		
Jun-99	(0.51)	-4%	1.20	10%	0.17	1%	2.07	13%		
Jul-99	(0.49)	-3%	1.21	9%	0.02	0%	1.98	11%		
Aug-99	(0.50)	-3%	1.51	10%	(0.47)	-3%	1.27	6%		
Sep-99	(0.48)	-3%	1.23	7%	(1.02)	-6%	0.95	4%		
Oct-99	(1.14)	-7%	0.56	4%	(0.93)	-6%	(0.65)	-3%	$0.92	5%
Nov-99	(1.25)	-7%	0.56	3%	0.55	3%	1.55	7%	4.80	21%
Dec-99	(1.22)	-6%	0.99	5%	0.47	2%	1.00	5%	0.94	4%
Jan-00	(1.21)	-6%	0.96	5%	0.16	1%	0.61	3%	1.44	6%
Feb-00	(1.19)	-5%	1.09	5%	(0.19)	-1%	0.11	0%	0.58	2%
Mar-00	(1.17)	-5%	1.00	4%	0.04	0%	0.61	2%	1.29	5%

	Field 6		Field 7		Field 8		Field 9		Field 10	
Apr-99	$2.57	16%	$2.68	17%	$2.46	16%	$3.68	23%	$3.04	20%
May-99	2.85	18%	2.45	15%	2.80	17%	3.83	23%	3.38	21%
Jun-99	2.68	16%	2.44	15%	2.64	16%	3.82	23%	2.65	16%
Jul-99	2.50	13%	2.38	13%	2.42	13%	3.85	20%	3.14	17%
Aug-99	1.80	9%	2.02	10%	1.75	9%	4.18	21%	2.04	10%
Sep-99	0.99	4%	1.57	7%	0.90	4%	6.14	27%	1.52	7%
Oct-99	(0.44)	-2%	0.32	2%	0.01	0%	2.13	11%	0.19	1%
Nov-99	1.60	8%	1.39	6%	2.14	10%	2.13	10%	1.66	8%
Dec-99	1.22	6%	1.50	7%	1.63	7%	2.06	9%	0.91	4%
Jan-00	0.76	3%	1.31	6%	1.21	5%	2.91	12%	1.17	5%
Feb-00	0.33	1%	1.00	4%	0.78	3%	2.60	10%	0.87	3%
Mar-00	(0.16)	-1%	1.38	5%	0.86	3%	1.95	8%	1.28	5%

	Field 11		Field 12		Field 13		Field 14	
Apr-99	$2.70	17%	$2.36	15%	$1.04	7%	$4.71	32%
May-99	2.43	15%	2.37	15%	1.37	9%	3.52	23%
Jun-99	2.68	16%	2.40	15%	1.11	7%	2.53	16%
Jul-99	2.59	14%	2.43	13%	1.17	7%	2.63	15%
Aug-99	2.12	11%	2.39	12%	0.95	5%	2.64	14%
Sep-99	1.48	7%	2.38	11%	1.02	5%	2.57	12%
Oct-99	0.31	2%	1.02	5%	(0.29)	-2%	0.90	5%
Nov-99	1.81	8%	0.55	3%	(0.05)	0%	0.94	4%
Dec-99	1.50	7%	0.54	2%	(0.40)	-2%	1.63	7%
Jan-00	1.36	6%	0.62	3%	(0.47)	-2%	2.92	13%
Feb-00	0.89	3%	0.54	2%	(0.29)	-1%	2.04	8%
Mar-00	1.38	5%	0.61	2%	(0.16)	-1%	3.37	13%

Note: Negative numbers ($) indicate that price received by Wyoming Revenue and Tax was greater than those received under the RIK program bids.

Minerals Management Service / State of Wyoming Land & Farm Loan Office

EXHIBIT D

Joint Effort Royalty-In-Kind Pilot Program

Royalty Oil and Gas Purchase System

v1.0

RIK Oil and Gas Reporting and Payment for: Federal Payor Code: RIK07

Empl Oil Company Inc. Payor Assigned (3a) Document Number: A12345

123 Green Tree Street Contract Number: MMS-RIKWY99-0007

Sam City, Wyoming 82003	State Payor Code=1000		MMS	State	Total
Report Month (mmyy):	1199	RIK Quantity	1,048	870	1,918
Pmt Method Code:	J	RIK Value	$10,484.99	$8,702.06	$19,187.05

Create Electronic Reports:

MMS-2014 Transmittal Letter

MMS 2014 Form

State of Wyoming - Form M2E

Internal Disk File Name:

a:\Federal.csv

a:\State.csv

Instructions: Enter the data in the yellow boxes above and below. Once you have ensured that all of the data elements are correct, select/push the "MMS-2014 Transmittal Letter" button to print the Transmittal Letter.

Then select/push the "MMS - 2014 form" button to create the MMS-2014 CSV format file.

Then select/push the "State of Wyoming - Form M2E" button to create the M2E text file. These separate files should then be sent to the MMS and the State of Wyoming as provided in the instruction package.

The RIK purchase amount due is shown in the green box noted as "RIK Value".

For modifications insert at least two new lines (one with a negative amount of the original line and one for the new line).

Give the new lines a new line code. For example line code B0100 would become B0100N1 and B0100N2.

Insert the proper amounts of lines in the 2014 Work Sheet and 2014 sheet.

Line Code	Property Name	Agreement Number	Purchased RIK Quantity	Purchase Unit Price	RIK Value	Gravity - API	Sales Month	Selling Arrg. Code	Transaction Code	Adjustment Reas. Code	MMS Roy Pct.	State Roy Pct.	100% Volume
B0100	Agreement	892-12345A	1,922.5	$10.00	$16,925.00	23.1	1099	001	01	00	7.36644%	4.75349%	13,964.60
B0101	Federal Lease	Fed 8938312344	19.8	$10.00	$198.05	23.1	1099	001	01	00	8.50000%	0.00000%	233.00
B1901	Mr. Rattlesnake	76-12979	205.4	$10.00	$2,064.00	24.1	1099	001	01	00	0.00000%	12.50000%	1,651.25
		Totals	1,918.7	$10.00	$19,187.05								15,848.80

Purchaser Required Information

Certification Statements

The Paperwork Reduction Act of 1995 requires us to inform you that this information is being collected by the Minerals Management Service (MMS) to document details of royalty payments and sales of minerals from leases on Federal lands. We will use this information to maintain and audit lease accounts, and we estimate the burden for reporting electronically is 2 minutes per line and for reporting manually is 7 minutes per line. Comments on the accuracy of this burden estimate or suggestions on reducing this burden should be directed to the Information Collection Clearance Officer, MS 4230, MMS, 1849 C Street, N.W., Washington, DC 20240 and to the Office of Management and Budget, Office of Information and Regulatory Affairs, Attention: Desk Officer for the U.S. Department of the Interior, Washington, DC 20503. Proprietary information submitted to the U.S. Department of the Interior is protected in accordance with standards established by the Federal Oil and Gas Royalty Management Act of 1982 (30 U.S.C. 1733), the Freedom of Information Act (5 U.S.C. 552 (b)), and the Departmental Regulations (43 CFR 2). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

CAROLYN B. MALONEY
14TH DISTRICT, NEW YORK

2430 RAYBURN BUILDING
WASHINGTON DC 20515-3214
(202) 225-7944

COMMITTEES
BANKING AND FINANCIAL SERVICES

GOVERNMENT REFORM

JOINT ECONOMIC COMMITTEE

Congress of the United States

House of Representatives

Washington, DC 20515-3214

DISTRICT OFFICES:

1651 THIRD AVENUE
SUITE 311
NEW YORK, NY 10128
(212) 860-0606

28-11 ASTORIA BOULEVARD
ASTORIA, NY 11102
(718) 932-1804

March 19, 2001

The Honorable Gale Norton
Secretary of the Interior
1849 C Street, NW
Washington, DC 20240

Dear Secretary Norton:

I recently received the latest report on the royalty in kind(RIK) pilot projects titled "Wyoming Oil Royalty In Kind Project–18 Months and Counting." This draft analysis attempts to evaluate the effectiveness and affordability of the Wyoming pilot projects.

I applaud your efforts to examine the performance of this new initiative, but I am concerned that this report fails to include many of the most important cost considerations for these projects. More importantly, the report's conclusions that Royalty in Kind generated approximately $810,000 more revenue than royalty in value appear seriously flawed.

Specifically, the overall cost-benefit analysis of the program does not consider any of the costs associated with running the Royalty in Kind program including processing, transportation, pipeline fees, and other program costs. Given the relative lack of experience that the Minerals Management Service has in these areas, it seems likely that these costs could be considerable.

Apparently, accurate data reflecting the true administrative costs of royalty in kind programs is also unreliable at this time. The report concedes that Minerals Revenue Management(MRM) is "still developing a process to manage royalties taken in kind" and that "the estimated costs for the new RIK process cannot be made at this time because the process is not final."

Also, while I am impressed with the considerable attention the report devotes to comparing Wyoming in value prices with royalties taken in kind, the report admits that market conditions in Wyoming fail to provide meaningful data comparisons. I would hope a more complete analysis of this project would include a discussion of the diverse market conditions that could effect the reliability of spot market values and a more detailed analysis of the statistical accuracy of these comparisons.

Finally, I remain concerned that this report is strongly subjective. Given that these pilots exist to determine the effectiveness of a royalty in kind program and the potential for cost savings

for American taxpayers, a complete and thorough analysis should be as objective as possible. The "18 Months and Counting" document reads more like a sales brochure than a thorough and objective analysis of an expensive, unprecedented government program.

Given the highly controversial nature and complexity of oil valuation and the fact that recent valuation regulations add $66 million to the Treasury each year, I believe this pilot project deserves a more thorough and objective analysis. I hope you will consider these concerns before proceeding with any further expansion of the royalty in kind pilots.

I appreciate your consideration of these concerns and welcome your immediate reply.

Sincerely,

Carolyn B. Maloney

CAROLYN B. MALONEY
Member of Congress

cc: Senator Barbara Boxer
Acting MMS Director Tom Kitsos
Godwin Agbara, General Accounting Office
Jim Wells, General Accounting Office

American Petroleum Institute | US Oil & Gas Association | Domestic Petroleum Council | ipaa America's Oil & Gas Producers

April 26, 2001

Thomas R. Kitsos
Acting Director, Minerals Management Service
Main Interior Building, MS 4230
1849 C Street NW
Washington, DC 20240

Re: Comments on the 3/7/2001 Draft evaluation of the Wyoming Oil Royalty In Kind Pilot program

Dear Mr. Kitsos:

I am writing on behalf of our coalition of producers in support of the program described in MMS' draft report "Wyoming Oil Royalty In Kind Pilot, 18 Months and Counting." The members of the American Petroleum Institute, Domestic Petroleum Council, Independent Petroleum Association of America, Independent Petroleum Association of Mountain States and the US Oil and Gas Association wholeheartedly support MMS taking its federal royalty share of oil and gas in-kind and we commend the MMS for its' significant efforts in this worthwhile endeavor. Taking royalties in kind (RIK) is a valuable tool for the government to have at its disposal and we urge its expanded use where it makes good business sense to do so.

As an industry, we firmly believe that RIK provides benefits to all stakeholders. Through continued outreach and communication between the MMS, States and industry, operational RIK programs will continue to achieve excellent results. Many improvements have been made in the RIK Pilots since the initial Gas Pilot of 1995 and we believe that as the MMS and industry have gained experience in RIK programs, more cost savings and benefits have been realized.

The Wyoming RIK Pilot has successfully demonstrated that RIK:

- Provides simplicity for lessees and for government through streamlined processes.
- Provides a more accurate way to receive the federal royalty share.
- Provides certainty for the producer and the government that the royalty obligation is fulfilled once the correct amount of oil or gas is delivered.
- Provides the Government the flexibility to dispose of its royalty share as it sees fit with excellent potential to enhance revenues.

- Reduces administrative burden for government and industry because it is more efficient and results in significantly lower audit costs.

- Avoids costly, time-consuming disputes that often result over the valuation of the oil or gas.

- In principle and practice, RIK offers a straightforward way of insuring the proper royalty share is obtained. A well-designed RIK program would encompass operational controls to build upon these successes. Workability and streamlining would therefore continue to be the culmination of any well-designed RIK program.

Certainly some problems have been encountered in this learning process and we believe additional progress could be made in these few key areas to further enhance the success of an RIK program:

- Revisions to the sales contract should be made to eliminate burdensome and unnecessary requirements.

- The MMS should reconsider its balancing methodology. The current methodology does not allow for the maximum administrative benefits of RIK. The draft Wyoming RIK Pilot Report states "production balancing issues occur regardless of whether the royalties are being paid in kind or in value." Balancing in the manner MMS is currently using inevitably leads to an audit on the value of production, something RIK seeks to avoid. We appreciate the opportunity to work with MMS in the COPAS oil imbalance project and hope that you continue to send a representative to those meetings so that the final work product will be something to incorporate into the RIK procedures and documents.

- Valuation should not be included in the RIK equation. By definition there is no valuation component of an RIK system, nor should there be. We believe that for RIK to be a simple, certain process valuation must not enter into the RIK royalty equation. The draft Wyoming RIK Pilot Report states RIK "is simpler than the current reporting requirements" and that "the in kind process provides greater accuracy and certainty in the payment of royalties." We agree. This is because an RIK system eliminates great expense, uncertainty and difficulty associated with valuation. As was simply stated in the report, "reporting and paying royalties under an RIK program is a much simpler process than under in value royalties."

- We urge the MMS reconsider taking trucked oil volumes and to develop another basis for evaluating the taking of these barrels. MMS should be able to add value to these volumes via aggregation, thus increasing revenues. Therefore, while we concede taking trucked volumes in-kind is a more complex task than taking pipeline volumes, we continue to believe taking trucked volumes is feasible and warrants further study.

- Audits of RIK volumes should be limited to volume audits only. After the fact audit of RIK payments would fly in the face of what RIK is intended to accomplish. Analysis and evaluation at the conclusion of the RIK process is beneficial; however, comparisons to in-value systems are both unwarranted and unnecessary. Audits should be less frequent and only related to volume. We suggest that MMS look for ways to avoid valuation in balancing and evaluation of RIK programs.

- A simpler reporting process is laudable and desired. It provides significant savings to lessees and the government. By reduced reporting lines MMS has quantified administrative savings. This reduced reporting alone should achieve substantial savings.

Your report states that "since MMS is still developing its processes for managing RIK, it cannot document any cost savings at this time." However, we believe you do in fact document significant savings when you later stated that "the reporting requirements for the RIK pilot resulted in a reduction of approximately 80 per cent of the reported lines" and "reduced litigation costs present an additional, but not insignificant potential savings to all parties."

We agree that industry has realized some administrative savings as well. There is no question that RIK results in a greatly streamlined reporting process, a process we feel confident will become even simpler as the RIK process is refined. Every barrel of oil and Mcf of gas taken in-kind is a unit of production that should avoid costly audits, appeals and litigation over valuation issues. The result is not only a lower administrative cost associated with producing oil and gas from federal lands, but a better, less confrontational, more business-like relationship between the industry and the MMS.

These are changes we all should welcome. We have been gratified by MMS's efforts to consult and collaborate with the industry in constructing and conducting these RIK pilots, and we appreciated the flexibility MMS's RIK team has demonstrated in its efforts to make the pilots as user-friendly as possible.

Those savings to government and lessees would only grow were RIK established as a permanent program within the Department of the Interior. Full-scale implementation of an RIK program is necessary before MMS; industry or States can realize the full extent of administrative cost savings the RIK concept offers. We urge MMS to continue to pursue legislative changes designed to enhance its' flexibility in administering RIK programs.

In closing, we applaud MMS for its willingness to utilize RIK to identify more innovative ways to reduce costs and manage oil and gas revenue streams strategically to the benefit of the public and industry.

Sincerely,

V. L. Leonard