# Report to Congress:

# Minerals Management Service

# Royalty in Kind Operation for Fiscal Year 2006

# Energy Policy Act of 2005 - - Section 342

April 2007

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## Executive Summary

This report responds to Section 342 (e)(2) of the Energy Policy Act of 2005 (EPAct) requiring the Secretary of the Interior to submit a report to Congress for each of fiscal years (FY) 2006-2015 that describes the performance, benefits, and savings associated with the Minerals Management Service's (MMS) Royalty in Kind (RIK) Program. This FY 2006 report is the third annual report developed by the MMS to document the status of the RIK Program. The report contains six sections including (1) a brief background of the RIK program, (2) the overall program status, (3) MMS progress in implementing the May 2004 *Five Year Royalty in Kind Business Plan,* (4) FY 2006 revenue and cost performance, (5) conclusions and preview for FY 2007, and (6) the specific reporting requirements of Section 342 of EPAct.

The MMS RIK Program is now in its third full year of operational status after the May 2004 *Five Year Royalty in Kind Business Plan* marked the transition of the program from pilot projects to an operational program.

FY 2006 saw a positive evolution of the MMS RIK program as a fully operational component of MMS's asset management approach to managing the Nation's mineral royalty asset stream. Program performance outpaced program goals. Administrative costs were decreased compared to the cash royalty alternative. Revenues to the Treasury were increased. Accounting periods were closed within 6 months. Agency knowledge of the Nation's energy infrastructure/markets increased.

**Program Status and Scope.** In FY 2006, while volumes taken in kind decreased due to the effects of Hurricanes Katrina and Rita, total revenues to the U.S. Treasury increased when compared to the previous year. A total of 75,279,559 barrels of oil equivalent (BOE) were taken in kind and sold by MMS in FY 2006. This volume is approximately 90% of the volumes taken in kind for FY 2005. The value of RIK oil and gas in FY 2006 was $4,087,885,440, a 10% year-on-year increase in value – the increase reflecting the effect of markedly higher energy commodity prices during FY 2006.

The Gulf of Mexico (GOM) remains the core source area for RIK volumes sold. As of the end of FY 2006, MMS took in kind approximately 72% and 45% of the crude oil and natural gas royalty volumes, respectively, produced daily in the GOM. MMS and the State of Wyoming, in a joint pilot project, began taking natural gas in kind for Federal gas production in Wyoming in April 2006 at the rate of 30,000 MMBtu (million British Thermal Units) per day.

## Program Performance

Administrative Cost Performance. FY 2006 was the third year in which MMS performed a comprehensive comparative analysis of the costs of administering

the RIK and Royalty in Value (RIV) offshore programs at MMS. The FY 2006 cost per BOE for RIK was 7.6 cents. This compares to a FY 2006 cost of 10.8 cents/BOE for RIV, and represents a 30% reduction attributable to RIK. Using producing properties as the unit of measurement, the FY 2006 RIK cost per unit was $7,444 compared to $10,811 for RIV, a 31% reduction in costs.

Increases in efficiency from RIK activity translate to cost avoidance of $2.3 million for offshore properties. That is, if RIV were applied to all BOE at the 10.8 cent rate versus a combination of RIK/RIV at the 7.6 and 10.8 cent rates, respectively, additional costs of $2.3 million would have accrued.

Revenue Performance. Measurement of MMS's RIK revenue performance for FY 2006 indicates a revenue gain of $26.2 million related to both the natural gas and crude oil business units. Combined with an additional revenue gain of $2.6 million in additional interest earned on RIK revenues received 5 to 10 days earlier than under the RIV program, a total revenue gain of $28.8 million was measured for the MMS RIK program in FY 2006. These results indicate that the five-year, $67.5 million incremental revenue goal, which was updated in FY 2006 for the MMS RIK program is quite achievable. However, it should be noted that revenue gains will be variable and future gains - or losses - are difficult to predict. This fact underscores the importance of the associated administrative benefits of RIK described above.

**Overall RIK Revenue Performance for FY 2006**

| Category | Revenue Gain (Natural Gas) | Revenue Gain (Crude Oil) | Total |
|---|---|---|---|
| Sales | $22,764,227 | $3,490,618 | $26,254,845 |
| Interest | $636,611 | $1,996,859 | $2,633,470 |
| Total | $23,400,838 | $5,487,477 | $28,888,315 |

The RIK revenue performance far exceeded goals, reflecting the commercial leverage that the scale of the Federal royalty portfolio provides. The overarching factor in this success, however, is the development and maturation of the skill sets and business experience of the RIK staff.

In FY 2007, MMS will continue to explore opportunities for program application. We expect the natural gas RIK business unit will continue to expand in the GOM and Wyoming. The crude oil business unit will remain relatively static in size. MMS and the Department of Energy will begin to the fill of the Strategic Petroleum Reserve in July 2007 with an initial 50,000 barrels per day to be taken from the "Unrestricted" Crude Oil portfolio. Expansions of the RIK business model for both oil and gas will include diversification of sales methods and increased movement of energy commodities to market centers.

**Minerals Management Service/Minerals Revenue Management**
**Royalty in Kind Program FY 2006 Report**
**April 2007**

Section 342 (e)(2) of the Energy Policy Act of 2005 (EPAct) requires that for each of fiscal years (FY) 2006-2015 in which the United States takes oil or gas royalties in-kind from production in any State or from the outer Continental Shelf, excluding royalties taken in-kind and sold to refineries under subsection (h), the Secretary shall submit to Congress a report that describes –

(A) the one or more methodologies used by the Secretary to determine compliance with subsection (d), including the performance standard for comparing amounts received by the United States derived from royalties in-kind to amounts likely to have been received had royalties been taken in value;

(B) an explanation of the evaluation that led the Secretary to take royalties in-kind from a lease or group of leases, including the expected revenue effect of taking royalties in kind;

(C) actual amounts received by the United States derived from taking royalties in-kind and costs and savings incurred by the United States associated with taking royalties in-kind, including administrative costs savings and any new or increased administrative costs; and

(D) an evaluation of other relevant public benefits or detriments associated with taking royalties in-kind.

This FY 2006 is the third annual report developed by the MMS to document the status of the RIK Program. The report contains six sections including (1) a brief background of the RIK program, (2) the overall program status, (3) MMS progress in implementing the May 2004 *Five Year Royalty in Kind Business Plan,* (4) FY 2006 revenue and cost performance, (5) conclusions and preview for FY 2007, and (6) the specific reporting requirements of Section 342 of EPAct.

## 1 Background

The MMS is responsible for ensuring that all revenues from Federal and Indian mineral leases are effectively, efficiently, and accurately collected, accounted for, and disbursed to recipients. These substantial revenues, over $12.8 billion in FY 2006, are disbursed to the U.S. Treasury, other Federal agencies, 34 states, 32 Indian tribes, and some 30,000 individual Indian mineral owners.

Historically, most of these revenues have been received in the form of cash payments, also known as royalty in value (RIV) payments, paid by mineral development interests. In the mid-1990s, MMS began exploring the potential for a broadly applied RIK program, in which royalties are paid in commodity, rather than cash, to increase efficiencies, decrease conflict, and enhance net revenues generated from oil and gas production royalties. Several pilot projects tested this approach under a variety of conditions for crude oil and natural gas, and for onshore and offshore production volumes. Based on the pilot projects, MMS

concluded that the RIK method is a viable tool to use in managing the Nation's oil and gas royalty assets. The MMS also concluded that RIK is not optimal for all oil and gas production scenarios. Accordingly, selective and strategic use of both RIK and RIV, based on systematic economic analysis of the Federal oil and gas portfolio, is the royalty asset management strategy adopted and used by MMS.

In May 2004, MMS released its *Five Year Royalty in Kind Business Plan* (Plan) outlining the business principles, objectives, and specific action items that will guide and evolve the Federal RIK operation from FY 2005 through FY 2009. The Plan, which marks the transition of the MMS RIK initiative from pilot projects to an operational program, is aimed at attaining an effective, steady-state RIK program of the highest quality and integrity. The first two years of operations under the Plan were dedicated to enhancement of the internal control environment, organizational structure, in-house human resource skill sets, and performance measurement capability. Years three through five of the Plan focuses on refining the RIK commercial business model to optimize benefits to the government through expanding various marketing strategies.

## 2 RIK Program Status

### 2.1 Business Model/Approach

The MMS RIK operation has adopted the business strategy of a conservative producer/seller of energy commodities at entry points into the wholesale market at or near the lease in producing areas. All sales are competitively made and revenues are received based on the spot market for physical sales transactions as reported by the major price reporting publications at the most liquid and transparent market points. The MMS does not employ strategies involving speculative storage positions, fixed prices, hedging, or financial derivatives. Typically, sales are for multi-month terms, at this point in time for periods no more than one year in length. Transportation and processing contracts are negotiated and executed where favorable to optimize revenue returns over RIV. Standard industry contracts and business processes are used.

The above business model is consistent with statutory authorities, and reflects a conservative approach designed to minimize the government's risk profile and selectively leverage the value of oil and gas lease terms that allow both the RIV and RIK options.

### 2.2 Status and Scope of the Program

The Federal RIK operation has matured and is now in its third full year of operational status after six years of pilot testing. Budgets, organization, staff, and management are in place. A focused business model, internal controls, information systems, risk policies/procedures, and standard commercial business processes are operating. Business relationships with state partners and industry counterparties and partners are established.

In FY 2006, a total of 75,279,559 barrels of oil equivalent (BOE) was taken in kind and sold, reflecting a value of $4,087,885,440. This volume is approximately 90% of the volumes taken in kind for FY 2005, and the value represents a 10% increase over FY 2005 RIK values. The decrease in BOE was due largely to the effects of Hurricanes Katrina and Rita on production in the Gulf of Mexico.

During the height of the hurricane activity in the fall of 2005, the Royalty In Kind Program Office fulfilled special information requests from the Department of the Interior and the Department of Energy on Gulf of Mexico infrastructure issues. These requests entailed everything from determining production amounts that could not flow, to mapping pipeline flows to onshore points, and contacting various industry personnel to determine why the oil or gas was not flowing. RIK personnel also worked diligently with purchasers in rerouting oil and natural gas sales points, where possible.

Federal oil and gas royalties are taken in kind in 25 portfolios or groupings within the two major business units of crude oil and natural gas. The Federal royalty position in the Gulf of Mexico is the core business focus area for both the crude oil and natural gas programs. As of the end of FY 2006, MMS took in kind approximately 72% and 45% of the crude oil and natural gas royalty volumes, respectively, produced in the Gulf of Mexico. In 2006, MMS began a pilot program with the State of Wyoming to take Federal onshore gas in kind. The pilot, which began deliveries in April 2006, brings RIK into new markets and will further diversify the RIK portfolio.

As of September 30, 2006, MMS RIK held 129 active contracts, including 32 active sales or exchange contracts and 97 contracts for transportation, processing, and miscellaneous services executed pursuant to DOI annual appropriations authorities. Payments for services under these contracts totaled $21,599,133 for crude oil and $7,039,373 for natural gas in FY 2006. The increase in payments for services for crude oil include hurricane surcharges invoked by the crude oil pipelines to recover costs to rebuild and conversion of former Strategic Petroleum Reserve (SPR) properties to the unrestricted oil portfolio. The increase in payments for natural gas were due to higher natural gas prices relative to natural gas liquids prices during October 2005 through January 2006, which resulted in negative processing margin.

### 2.3 Natural Gas RIK Business Unit

During FY 2006, the MMS took royalties in kind from the Gulf of Mexico and Federal leases in the State of Wyoming. In addition to Wyoming, MMS took onshore Federal natural gas in kind on behalf of the Bureau of Land Management. MMS sold approximately 9,000 million Btu (MMBtu) per day of natural gas associated with decommissioning of the National Helium Reserve. In FY 2006, gas RIK volumes totaled over 180 million MMBtu - nearly 493,000 MMBtu/day - sold in 21 sales portfolios. Revenues received from competitive

sales of these royalty volumes equaled over $1.4 billion, a 12% increase from FY 2005.

In FY 2006, the amount of natural gas taken in kind decreased by a modest 2% in volumes taken relative to FY 2005. This decrease was due to continued disruption of the gas pipeline flow in the fall of 2005 because of Hurricanes Katrina and Rita and overall declines in offshore gas production. Two major sales events occurred, in October 2005 and March 2006, for the ensuing U.S. domestic heating and cooling seasons, respectively. Participation and competition continued at a high level in these sales with respect to both numbers and diversity of bidders. Bidders included mid-stream marketers, major producers, utilities, industrial end users, and financial institutions. The October 2005 sale attracted 10 companies offering a total of 42 bids, and the March 2006 sale attracted 21 companies offering 127 bids. Individual sales packages typically generated more than six bids each.

At the end of FY 2006, MMS was selling natural gas royalty production from 557 onshore and offshore leases (61 in Wyoming; 496 in the Gulf of Mexico) delivered into 21 pipelines to 13 counterparties. A total of 16 purchasers bought RIK gas in FY 2006. These sales were supported by 81 transportation, processing, and miscellaneous service contracts. Additions to the RIK gas program in FY 2006 included Gulf of Mexico leases producing gas into the ANR Patterson Pipeline, Transco Central Louisiana Pipeline, and Wyoming onshore gas from the Madden field which added nearly 80,000 MMBtu/day to the RIK gas volumes sold.

In January 2006, the MMS Executive Committee approved the first MMS RIK natural gas long haul firm transportation commitment for onshore Wyoming leases on the Rockies Express Pipeline. This decision, based on extensive study of the Wyoming natural gas markets involved both MMS staff and outside commercial and legal consultants. MMS expects to transport 50,000 MMBtu per day under the commitment with the first delivery of Wyoming natural gas expected to begin in January 2008. This opportunity will facilitate RIK business plan goals through increased diversification of contract types, more end user purchasers, and marked increases in MMS knowledge of the Rocky Mountain region's gas markets.

## 2.4 Crude Oil RIK Business Unit

In FY 2006, MMS took crude oil in kind from the Gulf of Mexico, Pacific Outer Continental Shelf (OCS), and Federal lands in Wyoming. Crude oil RIK volumes totaled over 44 million barrels (or over 122,000 barrels/day) in four sales portfolios. This represents a 14% decline in volumes taken in kind for crude oil, resulting primarily from hurricane effects. The value of these royalty volumes was over $2.6 billion. The four crude oil RIK portfolios in FY 2006 were:

- Small Refiner Program (Gulf of Mexico): 13,586,984 barrels sold for net value of $833,577,818

- "Unrestricted" Crude Oil Sales for Gulf of Mexico: 27,865,100 barrels sold for net value of $1,685,390,839
- "Unrestricted" Crude Oil Sales for Pacific OCS: 2,424,214 barrels sold for net value of $131,190,275
- Wyoming Crude Oil Sales: 332,134 barrels sold for net value of $15,089,214

In FY 2006, the MMS crude oil RIK business unit completed the transition of properties from the Strategic Petroleum Reserve fill to the unrestricted crude oil program. The MMS crude oil RIK business unit also saw significant production declines due to the devastating effects of Hurricanes Katrina and Rita beginning September 2005. The entire stream of Heavy Louisiana Sweet and the majority of the Mars crude oil production were shut in. In fact, the Mars platform did not resume operations until 9 months after it was damaged by Hurricane Katrina.

For the period ending March 31, 2006, MMS in a joint decision with the State of Wyoming, terminated the Wyoming Crude Oil Program. The termination was due to continued decline of Federal and State royalty volumes (from a peak of 6,000 barrels per day in 1998 to 1,824 barrels per day for FY 2006) and substantially changed market conditions from the continued introduction of Canadian crude oil to the Rocky Mountain markets.

During FY 2006, crude oil royalty production from 754 onshore and offshore leases (337 in Wyoming; 417 on the OCS) was competitively sold or exchanged to 16 counterparties. The sales and exchanges were supported by 16 transportation and miscellaneous service contracts.

## 2.5 Partnerships with States and Other Federal Agencies

The MMS continued to jointly engage in RIK activities under a series of memorandums of understanding with states and Federal agencies:

- Joint sales of crude oil produced from Federal and State leases in the State of Wyoming, a business partnership in place since 1998. As of FY 2006 this agreement included natural gas RIK.
- RIK sales of natural gas produced from the offshore Texas 8(g) zone, a collaborative project with the State of Texas since 1999.
- RIK sales of natural gas/crude oil produced from the offshore Louisiana 8(g) zone, a partnership with the State of Louisiana beginning in FY 2004.
- Sales of natural gas produced from the National Helium Reserve, located outside of Amarillo, Texas, as the Reserve is decommissioned by the Bureau of Land Management.
- A new partnership with the State of Alabama commenced FY 2006, with an agreement to sell RIK natural gas.

## 3 Business Plan Implementation

The MMS continued implementing management action items of the *Five Year Royalty in Kind Business Plan* in FY 2006. The Plan includes guiding business principles, commercial objectives, and administrative goals, including:

- Meet or exceed revenue benchmarks consistent with statutory authorities.
- Enhance net revenue by $67.5 million over 5 years beginning in FY 2005. This measure increased from $50 million to $67.5 million to include revenue uplift from receiving revenue payments 5 to 10 days earlier than in value payments and "cost avoidance" dollars from taking volumes in kind versus program costs if left in value.
- Effectively manage/reduce administrative costs by 10%, per unit volume over the last three years of the Business Plan, beginning in FY 2007.
- Effectively contribute to the Nation's strategic energy initiatives.
- Implement systematic measurement of RIK program performance.
- Maintain the highest ethical and professional standards.

MMS completed organizational changes, process improvements, and some personnel enhancements during the first and second years. MMS is positioned to take advantage of market opportunities through implementing the enhanced marketing strategies and expand RIK volumes. All the specific goals and objectives are designed for completion by the end of the five year business plan.

| *Business Plan Segment* | *Implementation Steps* | Year 1 (Quarter 1 2 3 4) | Year 2 (1 2 3 4) | Year 3 (1 2 3 4) | Year 4 (1 2 3 4) | Year 5 (1 2 3 4) |
|---|---|---|---|---|---|---|
| **Policy Oversight Function** | Develop & Implement RIK Risk Policy & Procedures | | | | | |
| | Develop Internal Management Control Review ("IMCR") Guidelines | | | | | |
| **Performance Measurement** | Develop & Implement Rev. Perf. Measurement Metrics & Procedures | | | | | |
| | Develop & Implement Admin. Perf. Measurement Metrics & Procedures | | | | | |
| | Complete Administrative Cost Comparison for RIV/RIK | | | | | |
| **Organization & Human Resources** | Complete RIK Organizational Structure | | | | | |
| | Acquire or Contract for Required Personnel and Skill Sets | | | | | |
| | Ongoing Training Program for Mktg. & Scheduling Functions | | | | | |
| **Expanding Marketing Strategies** | Develop, Implement & Utilize Expanded Marketing Strategies | | | | | |
| | Complete Initial WY Assessments | | | | | |
| | Assess & Develop Specific Opportunities with Producing States | | | | | |
| **Information Systems Improvements & Process Controls** | Finalize/Develop Implementation of Perf. Measurement Modules | | | | | |
| | Implement Pipeline Pool Scheduling Capabilities | | | | | |
| | Assess/Improve Systems Capabilities to Reflect Expanded Marketing | | | | | |
| **Business Plan Performance Monitoring** | Measure Progress on 5-year Objectives Periodically | | | | | |
| | Reevaluate Assumptions and Drivers of the Business Plan | | | | | |
| | Develop New Five-Year Business Plan | | | | | |
| **Communication & Outreach** | Brief Congressional Members and Staff on RIK 5-year Plan | | | | | |
| | Provide Presentations/ Feedback Sessions with States, Industry, and other Stakeholders | | | | | |
| | Facilitate Review Session within MRM Organization Regarding Interrelationships and Synergies | | | | | |

## 3.1 Accomplishments

Actions envisioned for the second year of the Plan (FY 2006) were on schedule. These include actions in risk procedures, performance measurement, human resources, and expanding marketing strategies. Performance measurement is described in the next section of this status report.

### *3.1.1 Risk Policy Tasks*

The Plan calls for the development of a comprehensive RIK risk policy framework consisting of both a risk policy and associated procedures. The RIK Risk Management Policy was completed in August 2005 and can be found on the MMS web site. Procedures to implement the risk policy were developed in April 2006 and have been implemented.

### *3.1.2 Organizational Tasks*

The organizational objectives of the Plan include further increasing efficiencies and internal controls through complete implementation of the industry-standard front, mid, and back office environment, augmented by an independent risk office with economic analysis capability.

The primary organizational changes outlined in the Plan were accomplished in December 2004. Further organizational changes may be necessary in the Plan's out-years. The following changes have occurred to date:

- Creation of a Senior Executive Service-level RIK organizational entity.
- Establishment and filling of a Chief Risk Officer position/role outside of RIK line management, with responsibility for oversight of the RIK risk policy environment.
- Creation of a RIK Back Office to separate accounting, reconciliation, and receivables/payables functions from the front office functions of marketing and RIK property selection where they previously resided – resulting in even tighter internal controls.
- Establishment of an Economic Analysis Office in which support services related to portfolio analysis and performance measurement now reside. Performance measurement services are conducted under the guidance and review of the Chief Risk Officer.

### *3.1.3 Human Resources Tasks*

A primary human resource-related objective of the Plan is to institute an internal capability to expand the RIK business model to that of an active energy commodity producer/seller in upstream locations. Additionally, other activities may be best served through commercial contract support. The identified internal skill sets needing enhancement include marketing, scheduling, and economic analysis. The following tasks have been accomplished to date:

- Filled management positions in the new RIK organization: deputy manager, gas front office and economic analysis office.
- Staffed the Economic Analysis Office nearly to full build-out.

Several additional human resource elements in the Plan, including retention of scheduling and marketing expertise, are currently being implemented.

### 3.1.4 Expanding Marketing Strategies

Extension from the current business model will be made to potentially increase net revenues, while continuing to operate within the RIK program's statutory authorities and conservative risk profile. Strategies were developed to capitalize on market trends, manage uncertainty, and better optimize current practices. These strategies include diversifying the sales portfolio, aggregating volumes through pipeline pools, optimizing processing contracts, optimizing production area transportation, and exploring production exchanges. The following changes have occurred to date:

- RIK continues to diversify its portfolio by awarding contracts to more companies from different areas of industry. In each successive year, RIK marketed to new bidders and awarded contracts to new financial firms, marketing organizations, end users, utilities, and oil refiners.
- All gas processing and transportation arrangements have been reviewed in the past year and were renegotiated to reflect terms that were beneficial to the Government. This is evidenced in the marked increase in RIK gas revenue performance from $8.7 million in FY 2004 to $20.6 million in FY 2006 for contract renegotiation and another $2.1 million for new pipelines added to the RIK program.

## 4 RIK Program Performance

In FY 2005, the first year of the *Five Year Royalty in Kind Business Plan*, MMS fully established a comprehensive system of RIK program performance measurement - for both revenue receipts and administrative costs. These systems have been reviewed by independent consultants and/or accounting firms and by the GAO. MMS fully implemented their recommendations.

### 4.1 Administrative Cost Performance

FY 2006 was the third year in which MMS performed a comprehensive comparative analysis of the costs of administering the RIK and RIV programs at MMS. The FY 2006 cost per "barrel of oil equivalent" or BOE for RIK is 7.6 cents, an increase over FY 2005's cost of 5.9 cents. This increase was due largely to the decrease of volumes sold because of the effects of Hurricanes Katrina and Rita. The 7.6 cents cost for RIK compares to a FY 2006 cost of 10.8 cents/BOE for RIV, and represents a 30% reduction attributable to RIK. Using producing properties as the unit of measurement, the FY 2006 RIK cost per unit is $7,444 compared to $10,811 for RIV, a 31% reduction in costs.

The increase in efficiency from RIK activity translates to a cost avoidance of $2.3 million. That is, if RIV were applied to all BOE at the 10.8 cent rate versus a combination of RIK and RIV at the 7.6 and 10.8 cent rates, respectively, additional costs of $2.3 million would have accrued.

The RIV activities cost more than RIK primarily due to the necessity to audit the value and transportation costs associated with sales and movement of Federal mineral production. These audit requirements are inherently labor intensive due to the complexity of the interrelationships between the business practices of hundreds of mineral lessees and a set of valuation regulations that prescribe royalty payment standards applied to complex, dynamic market conditions. In RIK situations, valuation and transportation are determined by unambiguous commercial contract terms, thus providing for efficiencies and lack of conflict.

Additionally, we note several lines of qualitative data that indicate efficiencies due to RIK implementation. In FY 2006, out of 55 pending administrative appeals of onshore and offshore mineral royalty management decisions, none were RIK related. The number of appeals is a direct measurement of the potential for litigation and thus cost. Additionally, the time taken to close accounting periods under the RIK method is notably condensed compared to the RIV business cycle of at least 3 years. Specifically, for FY 2006, nearly 85% of RIK business activity was closed within 180 days of the month of RIK production.

## 4.2 Revenue Performance

Similar to administrative cost measurement, FY 2006 was the third full year in which the revenue performance of all RIK sales portfolios was measured. The measurement process is performed under the direction, guidance, and review of the MRM Chief Risk Officer, reporting outside of RIK line management to the Associate Director for Minerals Revenue Management, with "dotted line" reporting to the MMS Executive Committee. This is directly analogous to the organizational structure and reporting relationships existing in commercial enterprises relative to revenue performance measurement.

### *4.2.1 Principles Underlying the Measurement*

In MMS's revenue performance metrics, the objective is to measure RIK revenues against benchmarks created to represent fair market value. The primary principle underlying this system is that the benchmarks should represent a defendable interpretation of MMS's RIK statutory requirements to achieve both fair market value (authorizing legislation) and the value MMS would have received under a comparable royalty in value program (appropriations legislation). Additional principles in this area are that the methodology used to create the "fair market value" benchmarks should:

- Recognize that fair market value is a range of values rather than an absolute number
- Be well-defined, repeatable, and statistically accurate

- Apply across different time periods and groupings of properties/portfolios
- Reflect reasonable labor requirements
- Use as much royalty in value data as possible
- Use transparent market data as much as possible when accurate in value data are not available

### *4.2.2 Results*

Measurement of MMS's RIK revenue performance for FY 2006 indicates a revenue gain of $26.2 million related to both the natural gas and crude oil business units. Combined with an additional revenue gain of $2.6 million in additional interest earned on RIK revenues received 5 to 10 days earlier than under the RIV program, a total revenue gain of $28.8 million was measured for the MMS RIK program in FY 2006 (Figure 1). These results indicate that the five-year, $67.5 million incremental revenue goal for the MMS RIK program was nearly achieved in FY 2006. However, it should be noted that revenue gains will be variable and future gains - or losses - are difficult to predict. This fact underscores the importance of the associated administrative benefits of RIK described above.

**Figure 1: Overall RIK Revenue Performance for FY 2006**

| Category | Revenue Gain (Natural Gas) | Revenue Gain (Crude Oil) | Total |
|---|---|---|---|
| Sales | $22,764,227 | $3,490,618 | $26,254,845 |
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The revenue results discussed in this section are used by MMS in several ways. This report conveys the results to MMS stakeholders in the minerals revenue management program. Internally, MMS uses the results to measure RIK program performance relative to the program objectives. Lastly, the results are provided to the RIK front office asset managers to enhance their ongoing commercial decision making. Suboptimal results for individual sales portfolios may result in changes to marketing/contracting practices or conversion of properties or portfolios to revert back to RIV status.

RIK Natural Gas Portfolios. Domestic natural gas markets in FY 2006 were robust, with GOM prices generally ranging from $6 to $11 per MMBtu. October 2005 through January 2006 brought notable spikes in GOM prices up to $14 per MMBtu, as the effects of devastating hurricanes on natural gas markets were seen. Price volatility was high. Although domestic crude oil prices also increased with corresponding increases in natural gas liquid (NGL) prices, gas processing economics were generally negative in FY 2006 (i.e., unprocessed gas was generally of greater value than residue gas plus NGLs).

For FY 2006, the average RIK sales price for GOM gas was $7.89/MMBtu, whereas the average Henry Hub price was $8.85/MMBtu. The 96 cent difference

in these prices reflected the effect of transportation differentials and increased processing costs on a net MMS price at the offshore platform versus a gross Henry Hub price at the primary GOM onshore market center.

Figure 2 shows FY 2006 revenue performance for the RIK natural gas portfolios with an overall total revenue gain of $22.7 million or 13 cents/MMBtu. This represents a gain of about 1.6% over fair market value benchmarks, compared to a FY 2005 gain of 1.1%.

Performance for the 18 offshore sales portfolios ranges from a low of a 3.21% loss for the Stingray portfolio to a gain of 4.20% for the Manta Ray portfolio. Sixteen of the 18 portfolios show revenue gains. The sales portfolios with the largest revenue gains were Manta Ray, Garden Banks, Mississippi Canyon, ANR Patterson, High Island Offshore System, and Viosca Knoll. Factors contributing to these gains include:

- Processing: MMS used the size of the Federal royalty volume to achieve greater processing returns where competitive options to process at several plants exist. Many producers have locked in multi-year processing arrangements negotiated at prior times more favorable to processors than producers. Although processing economics were generally negative in FY 2006, MMS's processing contracts provided more economic options than the processing contracts of producers.
- Transportation: MMS was able to receive/negotiate/contract for significantly discounted transportation rates where multiple transportation options exist, as pipelines competed against each other to transport MMS gas that was previously contracted by producers for long periods to just one pipeline. Lower rates translate to higher net receipts to the Treasury.
- Basis Transactions: Based on market intelligence, MMS priced several sales packages not on the most local price index but on a more regional index with a location differential (basis) typically deducted from the price. As absolute gas prices increased during FY 2006, the basis between pricing points generally increased (reflecting increased cost of fuel) beyond the basis included in MMS contracts. Accordingly, MMS's net value received for these transactions reflected lower basis deductions than the market indicated and thus exceeded the market.

*MMS and the State of Wyoming began a pilot project to sell natural gas from* Federal leases located in the State beginning April 1, 2006. Performance for the two Wyoming portfolios in the Madden field was measured using regression analysis to estimate a RIV value going forward from March 2006 (the comparison benchmark). This comparison benchmark was then compared to actual RIK values received and indicated a loss of 1.14% for the six month period measured.

RIK Crude Oil Portfolios. Domestic crude oil markets were also robust in

FY 2006. Crude oil (WTI Cushing – the NYMEX crude oil benchmark price) steadily rose from the mid $60 level early in the fiscal year to the mid $70s in August 2006. Sweet grades of Gulf Coast crude oil ("LLS" and "HLS") were particularly strong, while Gulf Coast sour grades trailed behind as published differentials to WTI were over $8 at times. The MMS RIK barrels are predominantly Gulf Coast sour crude types, and thus the 2006 value of the RIK crude oil portfolio reflected these steep differentials to WTI (see below).

For FY 2006, the average RIK sales price for GOM crude oil was $60.40/barrel, whereas the average NYMEX WTI price was $66.22/barrel. The $5.82 difference in these prices is a reasonable and demonstrable effect of transportation, quality, and crude oil grade type differentials from the WTI Cushing price to the offshore platform. *Deductions for transportation can often range between $1 to $2 per* barrel. However, the most significant factor in this comparative difference is the effect of sour crude oil grade types on RIK price in the Gulf of Mexico. These significant discounts to WTI ranged from $2.25 to $7.25 per barrel depending on the crude type.

Figure 3 shows FY 2006 revenue performance for the RIK crude oil portfolios with an overall total revenue gain of $3.5 million or 8 cents per barrel. This represents a gain of 0.13% over fair market value benchmarks.

Performance of three of the four measured portfolios was positive and ranges from a low of a 0.17% loss for the small refiner portfolio in the Gulf of Mexico to a high of a 2.31% gain for the Pacific OCS portfolio. Factors contributing to the oil revenue performance included:

- Optionality in crude oil transportation and sales markets was leveraged, leading to increased revenues
- Pacific OCS barrels were placed in a favorable location for a refiner who paid a premium for domestic supply
- Wyoming barrels were sold on a fixed NYMEX differential as local values began to drop

## 5 Conclusions and Preview of FY 2007

Fiscal Year 2006 saw the positive evolution of the MMS RIK program as a fully operational component of MMS's asset management approach to managing the Nation's mineral royalty asset stream. Producing properties supporting the SPR fill in FY 2005 were seamlessly converted to commercial sales programs. Capabilities to manage the RIK portfolio were enhanced through development and publication of the RIK Risk Management Policy and Procedures. RIK program performance far outpaced program goals, reflecting the influences of the various technical factors described above. However, more important than technical considerations, the overarching factor in this success is the development and maturation of the skill sets and experience of the RIK staff applied to the substantial Federal oil and gas royalty portfolio.

In FY 2007, continued progress is being made in implementing the RIK business plan. Work will continue on enhancing human resource skill sets and expanding marketing strategies. We anticipate completion of the RIK risk metrics which are designed to objectively assist in decision-making, quantify Fair market value (FMV) risk for a specific time period, and report risk exposure to management to fully implement the RIK risk policy.

Operationally, MMS will continue to explore opportunities for program application. We expect RIK oil volumes to remain steady over the next several years. In order to offset the production decline from shallow water Gulf of Mexico properties, RIK will look for opportunities to add deepwater properties with royalty relief provisions that contain pricing thresholds that have been met. We also expect to see increased deep water production from new wells on leases that are already in kind.

MMS has been directed to provide royalty oil in an initiative to continue to fill the SPR. An initial volume of approximately 27 million barrels will be provided by RIK beginning July 1, 2007 with deliveries of 50,000 bpd and ramping up to 70,000 bpd on January 1, 2008. MMS will maintain the Small Refiner program during the SPR initiative as well as a reduced "Unrestricted" program.

The natural gas RIK business unit is anticipated to expand in the GOM and Wyoming. We expect the offshore expansion will be achieved through adding properties meeting RIK criteria from existing pipelines, adding royalty relief properties meeting price threshold requirements, and adding deep water production from new wells. Further RIK gas expansion is possible from Wyoming, depending on the results of the ongoing RIK gas pilot (now at 170,000 MMBtu per day).

Energy commodity markets are showing continued strength in FY 2007. Market strength at these levels is associated with a seller's market, a situation favoring producer/sellers of crude oil and natural gas, like the MMS RIK operation. However, several challenges exist. High energy commodity prices bring high volatility and dynamic basis relationships between pricing points. MMS RIK entry into the Rocky Mountain natural gas markets presents more direct exposure to a delicate balance between rapidly expanding regional production and the capacity to transport gas to consuming regions. As a result, price risk is increased. Each of these challenges is manageable by the capture and application of market intelligence and diligence in sales execution.

## 6 Energy Policy Act Section 342 Reporting Requirements

The following provides information responding to the four specific directives of Subsection (e)(2) of the EPAct, lettered A through D. The information is noted as responding wholly to the directive or provides a reference to another section or

appendix of this annual report.

## 6.1 Methodologies used by the Secretary

Conversion from RIV to RIK: MMS builds the financial economic case for conversion to RIK by gathering and researching public industry information, pipeline system maps, energy publications, transportation routes, processing options, downstream marketing routes, and index pricing. This research is focused on each property's existing economic case or royalty in value payments and the potential options for economic improvement. MMS includes transportation and/or processing bids in building this economic case. A comparison of the dollar amount the Federal Government is currently receiving in value along with the calculated value that would be received in kind is performed. Prior to conversion, MMS completes a conversion document recommending whether the pipeline/properties should be converted to in kind and containing pipeline maps showing properties analyzed; spreadsheet analysis comparing RIK economics versus RIV reported economics and the technical written economic case.

Revenue Performance Metrics: FMV risk is unique to RIK operations. Given the fiduciary responsibility to the taxpayer, RIK's performance is measured against a calculated FMV benchmark that approximates the royalty value that the RIV program would have received. Market price and basis volatility create risk exposure that RIK performance could be below the FMV benchmark due to the difference between the pricing mix used by RIK for selling the commodity and the pricing mix used in the FMV benchmark.

MMS computes a FMV benchmark range specific to the commodity, and compares it to our RIK sales value. To compute the FMV benchmark, MMS establishes a benchmark price that reflects major liquid pricing point(s) proximal to RIK properties. This benchmark price is adjusted to reflect transportation, quality, processing, and various marketing possibilities and any adjustments that may have been derived from RIV or market intelligence data. This results in a FMV benchmark for comparison to RIK actual values, netted back to the lease.

These measures meet statutory requirements to reflect commercial fair market value and a proxy for RIV. They recognize fair market value as a range of values, differentiate between forward-looking decision analysis and backward-looking measurement, use as much RIV data as possible, and use RIV data to calibrate market intelligence.

## 6.2 Evaluation Supporting FY 2006 Conversion of Leases from RIV to RIK

ANR Patterson Gas Pipeline: MMS converted natural gas royalties from RIV to in kind for 16 meters (38 leases/agreements) and approximately 23,000 MMBtu per day on the ANR Patterson Gas Pipeline beginning April 1, 2006. ANR operates an offshore pipeline system in the Central Gulf of Mexico that flows gas into either the Enterprise operated Calumet Gas Plant or the Crosstex operated Pelican Gas Plant and from there into ANR's interstate pipeline system. The MMS received an attractive processing offer which compared very favorably to standard third party deals at other gas processing plants. MMS converted this pipeline because it could provide a revenue uplift due to a favorable processing agreement.

Transco Central Louisiana Lateral Gas Pipeline: MMS converted natural gas royalties from RIV to in kind for eight meters (16 leases/agreements) and approximately 27,000 MMBtu per day on the Transco Central Louisiana Lateral Gas Pipeline System (CLL) beginning April 1, 2006.
Transco operates this offshore pipeline system in the Central Gulf of Mexico that flows gas into the currently inactive CrossTex operated Cow Island Gas Plant and from there into Transco's interstate pipeline system at Station 45. The MMS had the opportunity to enhance revenue by moving this gas past Station 45 into Transco Z3 at Station 65 and selling this gas at a highly liquid index price.

Wyoming Madden Field: MMS converted natural gas royalties from RIV to in kind for 61 Federal leases located in the State of Wyoming and approximately 30,000 MMBtu per day beginning April 1, 2006. The Lost Creek Gathering Pipeline can connect into either the Colorado Interstate Gas or Wyoming Interstate Company pipeline systems. MMS had the opportunity to enhance revenue by selling approximately two thirds of the gas at the field and avoiding a transportation charge, while obtaining a more favorable rate to transport on the remainder.

## 6.3 Revenues, Costs, and Savings Incurred from RIK

Revenue performance and administrative cost savings are discussed in Section 4 of this report.

## 6.4 Other Public Benefits or Detriments

During the height of the hurricane activity in the fall of 2005, the Royalty In Kind Program Office fulfilled special information requests from the Department of the Interior and the Department of Energy on Gulf of Mexico infrastructure issues. These requests entailed everything from determining production amounts that could not flow, to mapping pipeline flows to onshore points, and contacting various industry personnel to determine why the oil or gas was not flowing.

## Figure 2: FY 2006 Natural Gas RIK Revenue Performance

| RIK Gas System | Total Volumes (MMBtu) | Volumes per day | RIK Revenues | Revenue Gain (Loss) vs. FMV Benchmark Price | Revenue Gain (Loss) Per MMBtu | Percent Gain (Loss) |
|---|---|---|---|---|---|---|
| ANR Nearshore | 9,832,886 | 26,939 | $79,430,507 | $1,798,941 | $0.183 | 2.26% |
| ANR Patterson | 4,102,789 | 22,420 | $27,498,367 | $714,446 | $0.174 | 2.60% |
| Columbia | 6,924,958 | 18,972 | $54,386,876 | $710,606 | $0.103 | 1.31% |
| CTGS | 12,722,071 | 34,855 | $94,303,688 | $344,994 | $0.027 | 0.37% |
| Garden Banks | 17,014,666 | 46,616 | $145,760,247 | $3,992,602 | $0.235 | 2.74% |
| HIOS | 16,715,432 | 45,796 | $131,502,291 | $2,833,871 | $0.170 | 2.15% |
| Manta Ray | 7,699,882 | 21,096 | $68,188,892 | $2,860,530 | $0.372 | 4.20% |
| NHIS | 16,778,494 | 45,968 | $133,707,746 | $358,793 | $0.021 | 0.27% |
| Seagull/Blessing | 4,219,147 | 11,559 | $33,447,537 | $584,435 | $0.139 | 1.75% |
| Stingray | 8,491,495 | 23,264 | $56,151,604 | ($1,803,707) | ($0.212) | (3.21%) |
| TGP 500 | 6,740,313 | 18,467 | $49,671,905 | $457,405 | $0.068 | 0.92% |
| TGP 800 | 4,379,244 | 11,998 | $37,100,456 | $951,489 | $0.217 | 2.56% |
| TETCO (E. La) | 8,111,083 | 22,222 | $57,490,717 | $1,299,678 | $0.160 | 2.26% |
| Mississippi Canyon | 13,938,056 | 38,186 | $109,299,944 | $3,666,970 | $0.263 | 3.35% |
| Viosca Knoll | 13,416,156 | 36,757 | $115,667,418 | $2,601,936 | $0.194 | 2.25% |
| Transco SE | 12,162,522 | 33,322 | $95,436,880 | ($944,630) | ($0.078) | (0.99%) |
| Transco CLA | 4,966,888 | 27,141 | $33,858,735 | $673,808 | $0.136 | 1.99% |
| Trunkline | 11,996,452 | 32,867 | $99,733,486 | $1,981,696 | $0.165 | 1.99% |
| Wyoming Madden | 5,453,918 | 29,803 | $28,096,588 | ($319,637) | ($0.059) | (1.14%) |
| **Grand Totals** | 180,212,534 | 548,248 | $1,422,637,294 | $22,764,227 | $0.126 | 1.60% |

## Figure 3: FY 2006 Crude Oil RIK Revenue Performance

| RIK Oil Program | Total Volumes (bbls) | Volumes per day | RIK Revenues | Revenue Gain (Loss) vs, FMV Benchmark Price | Revenue Gain (Loss) Per bbl | Percent Gain (Loss) |
|---|---|---|---|---|---|---|
| Small-Refiner (GOM) | 13,586,984 | 37,225 | $833,577,818 | ($1,377,911) | ($0.10) | (0.17%) |
| Unrestricted Sale (GOM) | 27,865,100 | 76,343 | $1,685,390,839 | $1,504,870 | $0.05 | .09% |
| Unrestricted Sale (Pacific) | 2,424,214 | 6,642 | $131,190,275 | $ 3,028,152 | $1.25 | 2.31% |
| Wyoming | 332,134 | 1,824 | $15,089,214 | $335,508 | $1.01 | 2.2% |
| **Grand Totals** | 44,208,432 | 122,034 | $2,665,248,146 | $3,490,620 | $0.08 | 0.13% |