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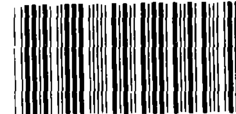
GAO

Report to the Chairman, Subcommittee on Interior and Related Agencies, Committee on Appropriations, House of Representatives

November 1987

MINERAL REVENUES

Cost of Modifying Gas Royalty Provisions Overestimated by Interior



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Resources, Community, and
Economic Development Division

B-229186

November 5, 1987

The Honorable Sidney R. Yates
Chairman, Subcommittee on Interior
and Related Agencies
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

On July 9, 1987, you requested that we review the validity and reasonableness of the Department of the Interior's estimate of the cost to retroactively modify its natural gas royalty provisions. Interior's Minerals Management Service (MMS) had provided the Subcommittee information indicating that if it retroactively modified the basis for the payment of royalties on natural gas produced from federal and Indian lands, so that the gas value reflected market prices rather than ceiling prices, about $134.5 million would be foregone for the period January 1, 1983, through July 31, 1986. MMS also estimated that of this amount about $500,000 in royalties already collected would have to be refunded to the oil and gas companies.

We found most of the assumptions used by MMS in its estimate to be reasonable. However, relying on MMS' assumptions but using more accurate data on market prices from the Energy Information Administration (EIA) than MMS used in preparing its estimate, we estimate that about $87 million in royalties rather than $134.5 million would be foregone. Although data are not readily available on the amount to be refunded, we believe, based on our discussion with industry officials, that MMS' estimate of $500,000 appears reasonable.

The amount of royalties to be foregone and the amount to be refunded is important not only to the U.S. Treasury but also to the states which share in certain of these revenues. Except for Alaska, every state whose boundaries encompass federal mineral leases receives 50 percent of the royalties collected from leases located within the state's boundaries. Alaska receives 90 percent of the royalties, after certain deductions, from federal leases within the state.

Background

The Natural Gas Policy Act (NGPA) of 1978 established higher ceiling prices so the price for various categories of natural gas sold in interstate

commerce would be raised. (These NGPA categories are expressed numerically and are numbered consecutively from 102 up to 109. See app. I.) The act also authorized the Federal Energy Regulatory Commission (FERC) (formerly the Federal Power Commission) to regulate gas pricing and to make limited changes to ceiling prices. Interior's Notice to Lessees and Operators of Federal and Indian Onshore Oil and Gas Leases, Number 5, (commonly referred to as NTL-5) dated May 1, 1977, instructs lessees how to determine the value of natural gas for royalty purposes. NTL-5 states that the value of onshore natural gas sold in interstate commerce used as the basis for paying federal royalties should be the price received (market price) by the lessee or operator, or the ceiling price established by FERC for the particular category of gas sold, whichever is higher. Beginning in 1982 ceiling prices began to exceed market prices as supply exceeded demand and the gap increased in the years that followed.

During its audits of oil and gas companies operating federal leases, MMS auditors determined that royalties had been paid on the market prices rather than the higher ceiling prices. As a result, MMS billed companies for additional royalties due based on the higher ceiling price. However, after reviewing the difference between the market and ceiling prices for the period 1982 through mid-1986, MMS determined that applying the ceiling prices was unreasonable and should not have been used for setting royalty values. Effective August 1, 1986, MMS modified NTL-5 to permit it the flexibility to ensure that the gas value for royalty purposes reflected market conditions but decided not to make the modification retroactive. MMS has since reconsidered and has proposed modifying NTL-5 retroactively beginning May 1, 1982. By doing so, MMS would be accepting lower market prices, rather than ceiling prices, as the value on which federal royalties are based.

We examined and analyzed the documents used by MMS to develop its estimate of royalties that would be foregone. To better understand and evaluate the estimate, we discussed the methodology, including the basis for the assumptions made, with the MMS official who was the principal author of the estimate. To ascertain the validity of the MMS assumptions, we obtained market price data from EIA and met with FERC officials to obtain their views on the MMS assumptions. We did not verify the EIA data. FERC is responsible for regulating gas pricing and as such collects data about the gas market, which makes it a knowledgeable source to confirm MMS' assumptions. Where actual data were available to support figures used in the estimate, we traced it to support documents. These documents were the FERC regulations on natural gas ceiling prices; the

EIA Natural Gas Monthly - December 1986; and the MMS publication, Mineral Revenues: The 1985 Report on Receipts From Federal and Indian Leases. We also contacted the top 10 gas royalty payers to determine if they were due a refund for the period January 1, 1983, through July 31, 1986.

Estimate Assumptions Appear Reasonable

In order to estimate the amount of royalties that would be foregone if NTL-5 were modified retroactively, MMS had to make numerous assumptions about the amount and price of natural gas from federal and Indian lands that was sold in interstate commerce. These assumptions were based primarily on the knowledge and experience of MMS officials. Although data, for the most part, were not readily available to support MMS' assumptions, we believe most of the assumptions were reasonable based primarily on our discussions with FERC officials.

MMS used published EIA data to estimate the distribution of onshore interstate sales of natural gas by NGPA categories. This estimate was then used, together with MMS' published data on total onshore gas sales from federal and Indian lands, to estimate production by NGPA category. Because additional data were not readily available, MMS made the assumption based primarily on the professional judgments of its staff that about 75 percent of this gas from federal and Indian lands is sold in interstate commerce and therefore under NTL-5 is subject to ceiling prices.

To determine what portion of the gas in the different NGPA categories from federal and Indian lands was subject to the retroactive modification, MMS made other assumptions on the period of time and the quantities of natural gas subject to ceiling prices. Specific examples of these assumptions are:

- Eighty percent of the gas volume from tight sands formations (NGPA category 107) were subject to ceiling prices in 1983 and 1984. On January 1, 1985, when it was partially deregulated, 40 percent remained subject to ceiling prices for 1985 and through July 31, 1986.
- Fifty percent of the new onshore gas wells within existing fields (NGPA category 103) were subject to ceiling prices in 1985 and through July 31, 1986, after it was partially decontrolled on January 1, 1985.
- Ten percent of the new onshore gas wells outside existing fields (NGPA category 102) were subject to ceiling prices during the last 6 months of 1983.

- Thirty-three percent of the old gas dedicated to interstate commerce and interstate rollover gas (NGPA categories 104 and 106(a)) were subject to regulation for the last 6 months of 1985 through July 31, 1986.

The FERC Director and Deputy Director of Producer Audits and Pricing, and the Chief, Well Determinations Branch, gave us their views on MMS' assumptions. They did not comment on those MMS assumptions for which they had no knowledge, including the assumption that only 10 percent of 102 gas volume were affected by regulation in 1983 and that 33 percent of 104 and 106(a) gas volumes were affected for the last 6 months of 1985 through July 31, 1986. Based on their responsibility of regulating gas pricing and knowledge about the gas market, FERC officials believe the 75-percent figure used by MMS is reasonable for estimating the percentage of gas from federal and Indian lands sold in interstate commerce; that the national distribution of gas by NGPA category is similar to the distribution on federal and Indian lands; and the remaining assumptions are fair and/or reasonable.

GAO's Alternative Estimates

Because MMS did not use more accurate available data on market prices, we believe its estimate of $134.5 million in royalties that could be foregone is overstated. We estimate, based on EIA market price data, that about $87 million in royalties would be foregone. Assuming a worst case scenario, which we consider extremely unlikely, about $159 million would be foregone.

In addition to estimating the amount of gas subject to retroactive modification, MMS estimated the average annual market prices for the different NGPA categories. MMS' estimated average annual market prices were compared with the average annual ceiling prices to determine how much the ceiling prices exceeded the market prices. These differences were multiplied by the volume of gas assumed to be affected to estimate the amount of royalties to be foregone. The market price data used by MMS were obtained from a single pipeline company. However, these price data generally did not identify the NGPA category to which they applied; provide the volume of gas associated with the prices; nor identify the length of time the prices were in effect. The principal author of MMS' estimate told us that EIA data would have been used if more time had been available to develop the estimate of royalties that would be foregone.

We obtained market price data from EIA, which maintains the Purchased Gas Adjustments data base for FERC. These adjustment filings are submitted by gas pipeline companies and cover interstate purchases of natural gas. According to the EIA Director, Reserves and Natural Gas Division, this data base includes 41 interstate pipeline companies that handle 95 percent of all such gas purchases.

EIA provided market price data for the period January 1, 1984, through July 31, 1986, for the states of Wyoming, New Mexico, Colorado, and Utah, which account for nearly 90 percent of all gas produced from federal and Indian lands sold in interstate commerce. EIA was unable to provide these data for 1983 because the data were not considered reliable. EIA determined the weighted average annual market price for each NGPA category based on the prices and volumes of gas sold by NGPA category. We compared these prices with the annual market prices assumed by MMS. This comparison suggests that MMS underestimated the market prices for all NGPA categories except 106(a) gas. As a result, MMS' estimate of royalties to be foregone has been overestimated.

We discussed our use of EIA market price data with the principal author of MMS' study and, based on our discussion, we made minor adjustments to the data. After making these adjustments, we recalculated the estimate of royalties foregone using the same procedures and assumptions as MMS but used the EIA market price data, except for 1983, where we used MMS' data. As a result, we estimate that about $87 million rather than $134.5 million in royalties would be foregone.

As noted earlier, MMS made several assumptions based on professional judgment about the amount of gas volume in the different NGPA categories that would be affected by its retroactive modification that we could not verify. As an alternative to MMS' assumptions, we assumed a worst case scenario whereby 100 percent of the gas volumes considered by MMS were affected by ceiling prices, instead of the lesser percentages noted earlier. In addition, we included 100 percent of several NGPA categories for which MMS assumed zero percent of the volume was affected because EIA data suggested that the market prices were less than ceiling prices. We estimated foregone royalties in this scenario could be as high as $159 million. We believe, however, that such a worst case scenario is extremely unlikely.

Royalty Refund Appears Reasonable

If NTL-5 is retroactively modified, the total amount of royalties that would have to be refunded is unknown. However, based on the refund cases pending appeal before MMS relative to NTL-5, MMS' estimate that $500,000 would have to be refunded appears to be reasonable.

Royalties that have been collected but would have to be refunded if NTL-5 is retroactively modified fall into two categories: (1) royalties collected for which a refund appeal is pending and (2) royalties collected but for which no appeal is pending. MMS has determined that about $500,000 may have to be refunded for cases pending. It has also determined that some additional royalties have been collected as a result of audits for which appeals are not pending; however, MMS does not know how much was collected.

Data on refunds are not readily available because MMS audit reports do not specifically identify those royalties that were due as a result of the NTL-5 provision. Although it may be possible to identify the royalties related to this NTL-5 provision through individual case files, these files are located in three different field locations and would have required considerable effort and expense to obtain the needed data.

As an alternative to using audit reports, we contacted the American Petroleum Institute (API) to obtain its views on the amount of royalties that may have to be refunded. According to an API representative, API believes that MMS' estimate that about $500,000 might have to be refunded is a reasonable estimate. In support of its conclusion, API stated that (1) most lessees paid royalties on the basis of the price they received for the gas rather than the ceiling price; (2) any royalties paid on the ceiling price likely arose when the difference between market and ceiling prices was relatively small (mid-1982 through 1983). In addition, API conducted an informal poll of its members, and the results indicated that no significant refund requests are anticipated.

We also contacted the top 10 gas royalty payers, three of which have an NTL-5 related refund appeal pending. Representatives of five companies told us that no refund was due them or they had paid royalties based on the prices received for the gas rather than ceiling prices and therefore would not have refunds due. Two representatives told us they had off-shore but no onshore leases.

Conclusions

Numerous assumptions used by MMS to develop its estimate of royalties to be foregone are based primarily on the experience and knowledge of

its staff. We were able to identify the bases for many of these assumptions, and the bases generally were reasonable. However, using MMS' assumptions but relying on more accurate data on market prices from EIA, we estimate that about $87 million in royalties rather than $134.5 million would be foregone. Thus, if NTL-5 is retroactively modified, we believe the impact on the states and the U.S. Treasury will be less than Interior's estimate.

MMS appears to have underestimated the market price companies received from the sale of natural gas produced on federal and Indian lands for the period January 1, 1983, through July 31, 1986. This resulted in its estimate of $134.5 million in royalties to be foregone rather than the $87 million that we estimate using MMS' assumptions and specific market price data obtained from EIA.

The total amount of royalties that may have to be refunded is not known, and the data that might be used to make the determination are not readily available. However, it appears that companies based royalties primarily on the price received from gas sales rather than the ceiling price. It is also likely that the few companies who paid at the higher ceiling price and would be due a refund probably have already filed an appeal. As a result, MMS' estimate of $500,000 based on appeals pending seems like a reasonable estimate of the total royalties that may have to be refunded.

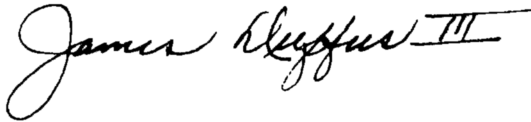
We discussed our findings with the Director, MMS, and other MMS officials. However, as agreed with your office, in the interest of providing a timely response we did not obtain official agency comments. The Director agreed that our estimates of the amount of royalties to be foregone and our estimate of the amount to be refunded if NTL-5 was retroactively modified were reasonable. Our work was performed in accordance with generally accepted government auditing standards.

Major contributors to this report are listed in appendix II.

Unless you publicly announce its contents earlier, we plan no further distribution of this report for 30 days from the date of this letter. At

that time, copies will be sent to the Secretary of the Interior; the Director, Office of Management and Budget; and other interested parties.

Sincerely yours,



James Duffus III
Associate Director

Natural Gas Policy Act (NGPA) Gas Categories

Category	Description
102	New onshore gas outside existing fields
103	New onshore gas wells within existing fields
104	Old gas dedicated to interstate commerce
105	Intrastate gas[a]
106	Interstate rollover gas (106(a))
107	High cost gas, including deep well and tight sands gas
108	Stripper well gas
109	Gas not otherwise covered

[a]Since NTL 5 applies only to interstate gas, this category was not included

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