

Details of Proposed Royalty Relief for Deep Gas Production

The Deep Water Royalty Relief Act of 1995 (DWRRA) (Title III of Pub. L. 104–58) provides authority to grant royalty relief to non-producing leases to encourage industry to lease, explore, develop, and produce oil and gas resources west of 87 degrees, 30 minutes west longitude in the GOM. Until now, we have not exercised that royalty relief authority for existing shallow water leases, *i.e.*, those located in water less than 200 meters deep. There have been few financial and technical obstacles on shallow water leases to drilling and initiating production, the large majority of which is from reservoirs less than 15,000 feet TVD SS.

In contrast, reservoirs deeper than 15,000 feet TVD SS are relatively unexplored in the potentially prospective and otherwise extensively explored shallow waters of the GOM. Some 10 TCF of gas have already been discovered in these reservoirs, mostly in drilling depths between 15,000 and 18,000 feet TVD SS. We estimate that another 5 to 20 TCF of gas are technically recoverable in undiscovered deep reservoirs, with the majority being located at depths below 18,000 feet TVD SS. Focused economic incentives can encourage exploration for and recovery of this huge resource potential.

Over 5,000 exploration wells were drilled in shallow water during the past 10 years, but only seven percent reached drilling depths between 15,000 and 18,000 feet TVD SS, and just two percent were deeper than 18,000 feet TVD SS. Less than two percent of all currently active leases in shallow water have had a gas well drilled 18,000 feet TVD SS or deeper. Relatively few deep wells have been drilled, in part because they are expensive due to unconventional rig specifications, the potential for high pressure and temperature conditions, and the presence of corrosive gas, all of which increase the costs of support facilities. Further, deep wells face a high risk of failure and require the discovery of large resource accumulations, with the potential for high flow rates, to be economic.

To accelerate the discovery and production of natural gas to meet the nation's growing energy needs, we propose to suspend some royalty obligations for certain existing GOM leases in shallow water that drill new deep wells and produce natural gas. In case of a directional well, the lease block on which the completion of the new deep well occurs qualifies for the royalty suspension volume. A new well

does not utilize an existing wellbore. We chose the royalty suspension volume as our mechanism for royalty relief because of several advantages it has over other systems of relief, such as providing a fixed dollar amount incentive or a reduction in the royalty rate. Royalty volume suspensions have been used extensively in the GOM (deepwater relief and deep gas relief for new leases). Both MMS and industry have experience and practical knowledge with this form of royalty relief. Royalty suspension for a volume rather than a value of production avoids a number of accounting problems and resulting conflict. The royalty suspension volume, rather than a reduction of royalty rate, provides more certainty to the lessee because, to the extent the royalty suspension volume is produced, it is more difficult for the agency to try to take away the royalty relief. In contrast, a decision to reduce the royalty rate might be reversed anytime over the life of production, and hence provides less certainty about receipt of a potentially large part of remaining royalty relief. Additionally, revenues received in the future are generally worth less to industry (*i.e.*, higher private discount rate) than to government (*i.e.*, lower social discount rate). Thus, providing upfront relief can be structured to be more valuable to the lessee and no more costly to the government than would a drawn out system of relief. For these reasons of practicality and efficiency, a royalty suspension volume is our mechanism of choice.

A lease must meet three criteria to be eligible for a royalty suspension under proposed § 203.40.

- The lease must predate the year 2001, when we began issuing new leases with deep gas production incentives, or the lessee must have exercised the option offered under § 203.48.
- The lease must be located in an area for which we have authority to offer royalty relief for new development.
- The lease must not have produced from a well with a perforated interval the top of which is 15,000 feet TVD SS or deeper, if that well commenced drilling before the publication date of this proposed rule in the **Federal Register**.

When deep gas production has previously occurred on the lease, or if drilling of a well that subsequently results in deep gas production began prior to publication of this proposed rule, then there is no reason to provide royalty relief, *i.e.*, a financial incentive to drill and extract deep gas resources. Yet, if deep gas production does not occur before the existing infrastructure

is abandoned, then the deep gas resources are less likely to be produced later.

We propose to make the royalty relief available as of the date of this proposed rule so lessees will not delay drilling new deep gas wells between the date we announce the incentives in the proposed rule and the date they would normally become effective with publication of the final rule. Of course, there is no guarantee that we will adopt a final rule for deep gas royalty relief. Moreover, though a lease could qualify for the incentive with a new deep gas well with drilling activity after the date of the proposed rule, the lessee could apply the royalty relief only to production occurring after the effective date of any final rule.

We also propose volume suspension levels that vary according to the drilling depth of the well. The incentive levels we propose for pre-2001 leases differ from the single, deep gas volume suspension with which we have recently offered new leases in shallow water. The variation in incentives across well depth categories for pre-2001 leases reflects the differing costs, risks, and resources that exist at selected well depth levels. Though this feature makes the rule more complicated, we feel it is necessary to adjust incentives to the differing needs for different drilling depths. Also, no bonus bid that reflects the value of the incentive on an individual lease is involved. It is more important to fine-tune incentive levels for these pre-2001 leases than it is for new leases.

Royalty Suspension Volumes for Successful Qualified Deep Wells

In proposed § 203.41, we specify a royalty suspension volume per lease of 25 billion cubic feet (BCF) for natural gas production from new wells on a lease block with completions that are entirely 18,000 feet TVD SS or deeper. This proposed relief level is based on estimates of the minimum reservoir size necessary for exploration and development to be economic at an expected landed price of about \$3.50/ thousand cubic feet (Mcf), accounting for various costs and risk factors. Our price assumption is based on the recent natural gas price level and in-house forecasts rather than EIA wellhead gas projections. A suspension of the typical 1/6th royalty obligation increases the set of potential drilling targets by reducing the minimum size of an economically recoverable reservoir. To determine the suspension volume amounts, a combination of factors, including minimum economic field sizes, costs, and risks, were balanced to encourage