

Note that although prices  $P_0$ ,  $P_1$ , and  $P_2$  represent separate prices for periods 1, 2, and 3 months beyond the trading month, respectively, they are all determined during the same trading month. The roll may be a positive or a negative number, and, therefore, increase or decrease the royalty value, depending on whether the futures market is falling or rising.

For example, assume that the month of production for which you must determine royalty value is March 2003. March was the prompt month on the NYMEX (for year 2003) from January 22 through February 20, which is the trading month in this case. April is the first month following the month of production, and May is the second month following the month of production. As explained above, to determine the initial NYMEX price which the roll will adjust, for March 2003 production you first take the average of the daily settlement prices published for each business day from March 1 through March 20 for deliveries in April (the prompt month) and for each business day from March 21 through March 31 for deliveries in May (after May becomes the prompt month).

To calculate  $P_0$ , a different set of days is used.  $P_0$  is the average of the daily NYMEX settlement prices for deliveries during March published for each business day between January 22 and February 20 (the trading month).  $P_1$  is the average of the daily NYMEX settlement prices for deliveries during April published for each business day during the same trading month (*i.e.*, between January 22 and February 20). Similarly,  $P_2$  is the average of the daily NYMEX settlement prices for deliveries during May published for each business day during the same trading month used for  $P_0$  and  $P_1$ . In this example, assume that  $P_0 = \$28.00$  per bbl,  $P_1 = \$27.70$  per bbl, and  $P_2 = \$27.10$  per bbl. In this declining market, the roll =  $.6667 \times (\$28.00 \text{ minus } 27.70) + .3333 \times (\$28.00 - 27.10) = \$.20 + \$.30 = \$.50$ . Fifty cents per barrel would then be added to the initial NYMEX settlement price used as the basis for royalty valuation. We have developed an illustration of this example and others which are available on the MMS Web site at <http://www.mrm.mms.gov/OilVal/ValGuid.htm>.

In this example, since the market is falling, prices that traders anticipate during the trading month (March) for deliveries in a future prompt month are lower than the prices at which oil actually is selling during March. The roll accounts for that trend. The roll will have the opposite effect in a rising market. The roll will be a subtraction

from the initial NYMEX price calculation (adding a negative number to the NYMEX price) because traders anticipate higher prices for the future prompt months than actually are occurring during the calendar month of production.

The roll would be added to the initial NYMEX price used as the basis for royalty valuation, except for leases in California, Alaska, and the Rocky Mountain Region. The reason for this limitation is that at the workshops, industry representatives stated that they use the roll primarily for Gulf of Mexico and mid-continent production, and not for production in California, Alaska, or the Rocky Mountain Region.

While MMS expects the basic operation of the NYMEX market to be the same for the foreseeable future, it is not so clear that the roll will be a permanent feature of the marketplace. Therefore, MMS proposes that the Director of MMS would have the option of terminating use of the roll when MMS believes that using the roll is no longer a common industry practice at the end of each two-year period following the effective date of this paragraph through notice published in the **Federal Register** no later than 60 days before the end of the two-year period. Further, MMS also proposes to have the option to redefine how the roll is calculated to comport with changes in industry practice through notice published in the **Federal Register** no later than 60 days before the end of the two-year period. MMS will explain its rationale when it publishes the notice. MMS believes that this flexibility is appropriate so that the valuation standards more closely reflect market developments. MMS specifically requests comments on whether this is appropriate, and whether a two-year period is appropriate.

MMS is proposing to use NYMEX-based value as the basic measure of value for production not sold at arm's length in all areas except for the Rocky Mountain Region, where MMS proposes to use it as the revised third benchmark (proposed to be redesignated as section 206.103(b)(3)). As discussed earlier, the roll would not be added to the NYMEX price in the Rocky Mountain Region since its use does not reflect current industry practice there. The base NYMEX price would be adjusted for location and quality differentials and actual transportation costs back to the lease, as explained below.

## 2. Adjusting the NYMEX Price for Transportation Costs and Location and Quality Differentials

Under the 2000 rule, market center index (spot) prices are adjusted to determine the value of production at the lease through location and quality differentials and deduction of actual transportation costs. See 30 CFR § 206.103 and 206.112. Location and quality differentials are derived from lessees' own arm's-length exchange agreements or, if exchanges are not at arm's-length, through MMS approval. Actual transportation costs from the lease to a market center or intermediate exchange point are determined under 30 CFR § 206.110 and 206.111 according to whether transportation arrangements are arm's-length or non-arm's-length.

Adopting the NYMEX price as the basis for royalty valuation requires an additional adjustment beyond those in the current rule because the NYMEX price is defined only at Cushing, Oklahoma for light sweet crude oil. Therefore, differentials from Cushing to market centers other than Cushing are necessary. MMS believes that many lessees do not have arm's-length exchange agreements between each market center to which they transport or trade and Cushing. Therefore, MMS proposes to allow the use of published differentials when lessees do not exchange oil to Cushing at arm's length. Accordingly, MMS proposes to define a new term, "WTI differential," as follows:

WTI differential means the average of the daily mean differentials for location and quality between a grade of crude oil at a market center and West Texas Intermediate (WTI) crude oil at Cushing, Oklahoma, published for each day for which price publications perform surveys for deliveries during the production month, calculated over the number of days on which those differentials are published (excluding weekends and holidays). Calculate the daily mean differentials by averaging the daily high and low differentials for the month in the selected publication. Use only the days and corresponding differentials for which such differentials are published.

*Example.* Assume the production month is March 2003. Industry trade publications perform their price surveys and determine differentials during January 26 through February 25 for oil delivered in March. (California is an exception. In California, the survey covers the calendar month of February for March deliveries.) The WTI differential (for example, the West Texas Sour crude at Midland, Texas, spread versus WTI) applicable to valuing oil produced in the March 2003 production month would be determined using all