UNITED STATES DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE
GULF OF MEXICO OCS REGION

NTL No. 97-12 May 13, 1997

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS LEASES
ON THE OUTER CONTINENTAL SHELF, GULF OF MEXICO OCS REGION

Economic Assumptions for RSVP Deepwater Royalty Relief Model

The economic assumptions originally established in the **Guidelines for the Application, Review, Approval, and Administration of the Deepwater Royalty Relief Program** dated June 26, 1996, have been updated effective April 1, 1997. These new economic assumptions, which are listed and discussed below, replace Section b of the **Economic Viability Report.** The Minerals Management Service requires the applicant to use these assumptions when applying for deepwater royalty relief. These assumptions will be updated periodically by the use of a Notice to Lessees and Operators.

Parameter	**Minimum**	**Most Likely**	**Maximum**
Starting Oil Price ($/bbl)	$17.20	$19.90	$22.64
Starting Gas Price ($/MCF)	$1.83	$2.25	$2.64
Real Oil Price Growth Rate 1	0.5%	1.0%	1.5%
Real Oil Price Growth Rate 2	0.5%	1.0%	1.5%
Real Oil Price Growth Rate 3	0.5%	1.0%	1.5%
Real Gas Price Growth Rate 1	1.5%	2.0%	2.5%
Real Gas Price Growth Rate 2	0.5%	1.0%	1.5%
Real Gas Price Growth Rate 3	0.5%	1.0%	1.5%
Real Cost Growth Rate		0%	
Year 2nd Scenario Starts		2005	
Year 3rd Scenario Starts		2020	
Base Year	1997		
Federal Income Tax Rate		35%	
Discount Rate Range	10%		15%
Random Number Seed		104	

Starting Prices - These prices are determined by using the Refiners Acquisition Cost for imported crude in the Petroleum Administration for Defense District (PADD) III, compiled by the Department of Energy’s Energy Information Administration (DOE/EIA). The starting oil prices are independent random variables. The starting gas prices are dependent on the starting oil prices with a +1 correlation factor. Both the oil and gas prices are expressed in "landed" terms appropriate for each product.

Price Adjustments - Starting oil prices are based on 30 API gravity crude oil. Starting gas prices are based on 1,028 British Thermal Units (BTU) per cubic foot of gas. Any quality adjustment for gravity differences or hydrocarbon content differences must be specified along with a complete justification for its amount and use. Certification must be provided that such quality differences exist.

To compute oil quality adjustments from the 30 API basis, use the following table, and interpolate the adjustment between the price adjustment values in the table that correspond with API gravity values above and below your sample. For example, if your crude oil has an API gravity of 37.6, then linearly interpolate between price adjustment values $0.75 and $0.87 by using the following equation:

$$[((37.6 - 35)/(41 - 35)) * (0.87 - 0.75)] + 0.75 = \$0.802$$

The resulting quality adjustment will be a $0.802-per-barrel increase to the starting oil prices.

To compute gas quality adjustments, increase the starting gas prices $0.01 per mcf for every 6.5 BTU above the standard of 1,028 BTU per cubic foot of gas, and decrease the starting gas prices by $0.01 per mcf for every 6.5 BTU below the standard. For example, if your gas hydrocarbon content is 950 BTU/cf, subtract the standard of 1,028 from 950, and divide the difference by 6.5 as shown in the following equation:

$$(950 - 1{,}028)/6.5 = -\$0.12$$

The resulting quality adjustment will be a $0.12-per-mcf decrease in the starting gas prices.

Oil Price Quality Adjustment Table

API Gravity	Price Adjustment	API Gravity	Price Adjustment
65.0	($2.13)	41.0	$0.87
50.8	$0.00	35.0	$0.75
50.0	$0.12	30.0	$0.00
45.0	$0.87	0.0	($4.50)

Real Price Growth Rates - These annual rates are based primarily on long-term oil and gas price projections inherent in the three world price scenarios published in the DOE/EIA Annual Energy Outlook and adjusted, as deemed necessary, by projections from other major forecasters. Decline rates (negative growth rates) may also be employed. The real oil price growth rate 1 is dependent on the starting price of oil with a +1 correlation factor. The real oil price growth rate 2 is an independent random variable. The real gas growth rate 1 is dependent on the starting oil price with a -1 correlation factor. The real gas price growth rate 2 is dependent on the real oil price growth rate 2 with a +1 correlation factor.

Real Cost Growth or Decline Rates - An annual rate used to represent an expected change in costs that may be partially related to the expected price changes. Cost growth rates are generally some fraction of the price growth rates. Decline rates may also be employed.

Year Scenario Starts - The year the second and third economic scenarios commence.

Discount Rate Range - A range of risk-free annual real before tax rates from which an applicant can choose a value to use for the purposes of this report. The value picked by the applicant will also be used for all other analyses performed in connection with the application.

Tax Rate - The Federal income tax rate for use in determining after-tax sunk costs.

Random Number Seed - A seed used to start the random number generator in the model. It is specified to allow for output reproducibility.

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