

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

NTL No.99-G02

Effective Date: March 1, 1999

**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

This Notice to Lessees and Operators (NTL) supersedes NTL 98-25 and updates the economic assumptions published in NTL 98-25, effective November 1, 1998. These new economic assumptions update Section b of the Economic Viability and Relief Justification Report. We require the applicant (you) to use these assumptions when applying for deepwater royalty relief. Together with these new assumptions, you must use a new version of the economic model (RSVP 2.1) for applications submitted after the effective date of this NTL. We will update these assumptions within the next six months.

Parameter	Minimum	Most Likely	Maximum	Dependency
Base Year		1999		
Starting Oil Price (\$/bbl)	\$8.25	\$10.75	\$13.18	
Real Oil Price Growth Rate 1	6.5%	7.4%	7.9%	
Year Second Oil Scenario Starts		2007		
Real Oil Price Growth Rate 2	0.3%	0.9%	1.3%	
Year Third Oil Scenario Starts		2020		
Real Oil Price Growth Rate 3	0.3%	0.9%	1.3%	
Starting Gas Price (\$/Mcf)	\$1.67	\$1.77	\$1.87	+1 with Starting Oil Price
Real Gas Price Growth Rate 1	4.1%	4.4 %	4.7%	+1 with Oil Price Growth Rate 1
Year Second Gas Scenario Starts		2007		

Real Gas Price Growth Rate 2	0.1%	0.7%	1.3%	+1 with Oil Growth Rate 2
Parameter	Minimum	Most Likely	Maximum	Dependency
Year Third Gas Scenario Starts		2020		
Real Gas Price Growth Rate 3	0.1%	0.7%	1.3%	+1 with Oil Growth Rate 3
Federal Income Tax Rate		35%		
Discount Rate Range	10%		15%	
Random Number Seed		104		
Overhead Cost Allowance		5%		

Starting Prices X The RSVP model selects starting oil and gas prices for each trial from triangular distributions with the parameters shown above. As previously, we based oil prices primarily on data published by US Department of Energy (DOE) for the US and for Petroleum Administration for Defense District (PADD)-III refiners acquisition cost (RAQ) of imported oil and the wellhead prices of gas. The most likely oil and gas prices are based on the Energy Information Agency (EIA) *Short Term Energy Outlook* (STEO) published in January 1999. The STEO forecast at that time is:

<i>Source: EIA</i>	1999			
	1 st	2 nd	3 rd	4 th
Imported Crude Oil (dollars per barrel US RAC)	10.01	11.09	11.41	12.41
Natural Gas Wellhead (dollars per thousand cubic feet US wellhead)	1.84	1.62	1.74	2.13

The triangular distribution around the most likely starting prices is based on EIA *Annual Energy Outlook*, December 1998, low, reference, and high scenarios.

The starting price for crude oil, published by EIA in STEO as the US average RAC, is adjusted to a regional basis, the PADD-III average RAC for imported crude, by a factor of 96%, which is the 1990-96 average ratio of the two prices.

We specify a direct dependency of the starting gas price on the starting oil price that RSVP selects on each trial.

Price Adjustments X Our starting oil prices apply to 30E API gravity crude oil. Our starting gas prices apply to 1,028 British Thermal Units (BTU) per cubic foot of gas. You may specify gravity differences or hydrocarbon content differences for your field. You must certify that such quality differences exist and provide complete justification for the amount you specify.

The RSVP model computes oil quality price adjustments for each trial from the 30E API basis, using the following table.

RSVP Viability Module Oil Quality Adjustment Table

API Gravity	Price Adjustment
65.0E	(\$2.13)
45.0E	\$0.87
41.0E	\$0.87
35.0E	\$0.75
30.0E	\$0
0.0E	(\$4.50)

The model interpolates the price adjustment it uses for gravity values between those in the table. For example, if your crude oil has an API gravity of 37.6E on a trial, then the interpolation between price adjustment values \$0.75 and \$0.87 uses the following equation:

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

The model would increase whatever starting oil price it picked on that trial by \$0.802.

The RSVP also increases or decreases the starting gas prices for Btu content above or below the standard of 1,028 BTU per cubic foot of gas. The size of the adjustment on each trial depends on the price and Btu content sampled. For example, if the model picks a Btu content of 950 BTU/cf together with a starting gas price of \$2.00/mcf, it adjusts the starting price actually used on that trial by the ratio of trial-specific Btu content to standard Btu content (950/1,028). The resulting starting gas price used on this trial would be \$1.85, i.e., \$2.00 * (950/1,028).

Real Price Growth Rates X These annual rates were estimated from the long-run price forecasts published in the *Annual Energy Outlook, 1999*. The estimation method involves merging the AEO long run forecast, which EIA publishes in December only, and the STEO short term forecast, which EIA updates monthly. The main steps followed are:

1. Obtain the annual AEO long run forecasts for the high, reference, and low world oil price cases for oil and the analogous three growth cases for gas.

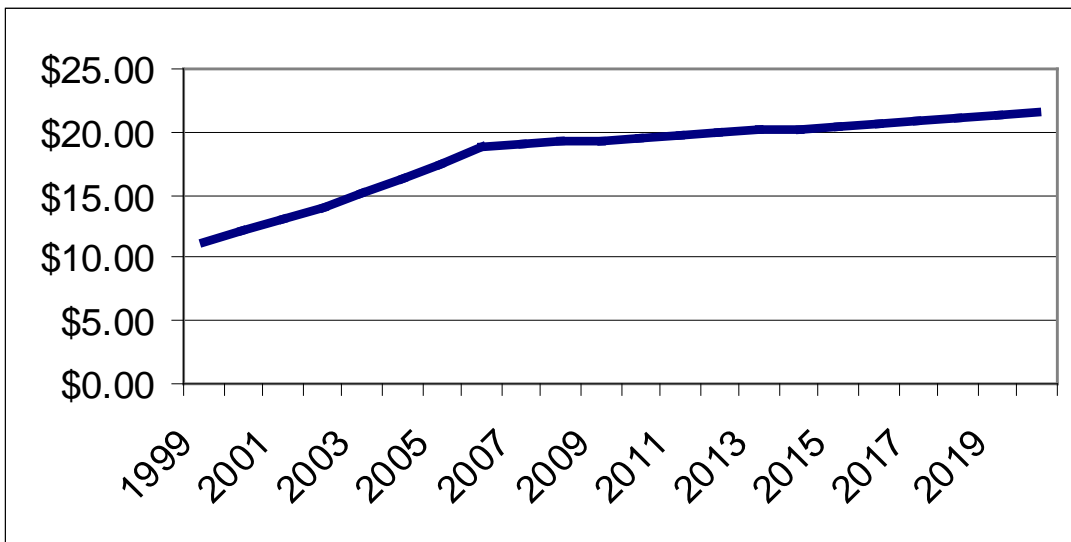
2. Equate the most likely starting price to the average of the current and next three quarters of the most recent STEO, as shown in the table above.

3. Forecast a most likely path of prices that begins at the starting price (2) and converges to the long run AEO forecast (1). The rate of convergence is derived from econometric analysis by MMS staff. For example, if the difference between the original AEO price for 1999 and the most recent STEO price for 1999 is -\$2.00 per barrel, then the forecast path is \$2.00 below the AEO in 1999, \$1.80 below the AEO in 2000, \$1.62 below the AEO in 2001, and so on.

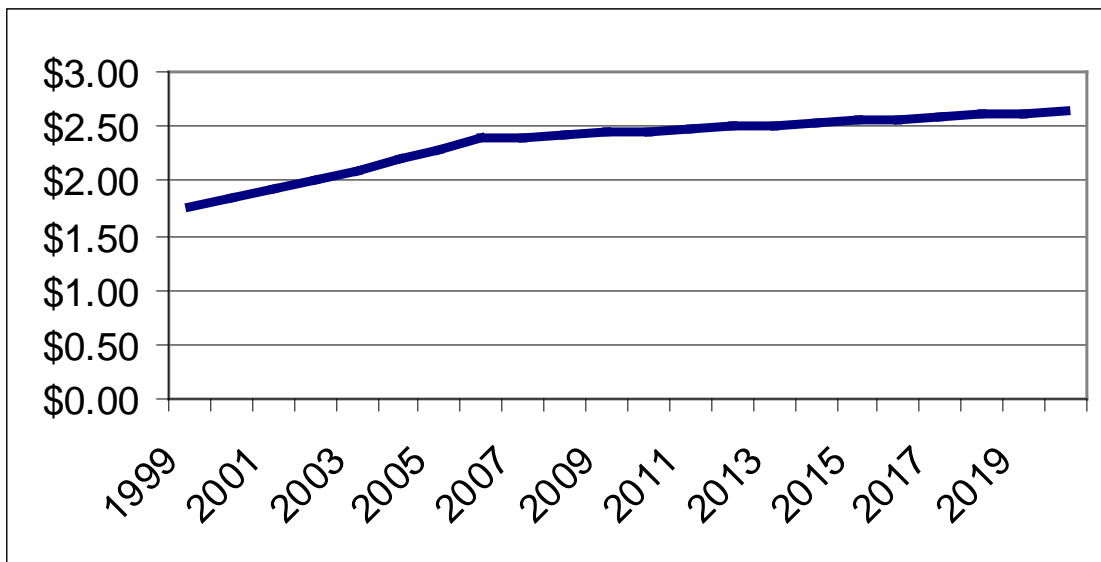
4. High and low forecasts are proportionate to the most likely path of prices, and all price paths are converted into RSVP input parameters, i.e. triangularly distributed starting prices and growth rates.

The real gas price growth rate 1 (RIGP) has a direct dependency on the real oil price growth rate 1 (RIOP). The RIOP2 has a direct dependency on RIOP, and RIGP2 has a direct dependency on RIOP2.

Price forecasts made using mode starting prices and mode growth rates appear as follows:



Oil price forecast in 1999 \$/bbl PADD-III RAC



Gas price forecast in 1999\$/Mcf US wellhead

Discount Rate Range X We offer a range of annual real, before tax, rates from which an applicant can choose a value for the purposes of this report. The value you chose must be used for all other analyses performed in connection with the application.

Tax Rate X We use the Federal income tax rate in determining after-tax sunk costs.

Random Number Seed X This is a seed number used to start the random number generator in the model.

Overhead Cost Allowance X An overhead allowance rate that you may use for certain joint costs which you are unable to allocate clearly to your particular field. The cost categories included are: Labor, Material, Abandonment, and Other Costs, as defined in the *Appendix I to NTL No. 98-17N: (or superseding updates) Guidelines for the Application, Review, Approval, and Administration of the Deep Water Royalty Relief Program*, November 1998.

Paperwork Reduction Act of 1995 Statement: Any collection of information that we mention in this NTL and its guidelines provides clarification, description, or interpretation of requirements contained in 30 CFR part 203. The Office of Management and Budget has approved our collection of information required by these regulations and assigned OMB Control Number 1010-0071. These guidelines do not impose additional information collection requirements that would be subject to the Paperwork Reduction Act of 1995.

A handwritten signature in black ink that reads "Chris C. Oynes". The signature is written in a cursive, flowing style.

Chris C. Oynes, Regional Director
Gulf of Mexico Region