



IN REPLY  
REFER TO:

# United States Department of the Interior

## MINERALS MANAGEMENT SERVICE

ROYALTY MANAGEMENT PROGRAM

P.O. BOX 25165

DENVER, COLORADO 80225



JUL 27 1992

MMS-RVS-0G  
Mail Stop 3520

Dear Payor:

By Dear Payor Letter dated September 30, 1988, the Minerals Management Service (MMS) reemphasized to payors their obligation to properly determine and pay royalties on production from Indian leases. In the letter, particular attention was given to the dual accounting (accounting for comparison) requirement found in most Indian oil and gas lease terms.

Since the issuance of that letter, MMS has been made aware that the information necessary for royalty payors to comply with their lease terms and/or regulation requirements (30 CFR § 206.155 (1991)) regarding dual accounting is not readily available in all cases. The MMS has noted that the majority of situations where the payor is unable to obtain the appropriate information involve the sale of the gas by the payor under an arm's-length contract prior to processing. To assist payors in timely complying with their obligations and to assure the Indian lessor timely receipt of the monies which they are due, MMS has developed a theoretical method of dual accounting that can be used to approximate the value of gas after processing.

The theoretical dual accounting method is described in the remainder of this letter with the necessary calculations presented in the enclosure.

### Theoretical Natural Gas Liquids (NGL) Volume Calculations

- The payor must determine the plant at which the gas is processed. In most cases the purchaser will provide this information.
- The payor must calculate the amount of each NGL that would be recovered at the gas plant. The payor will need to have periodic gas analyses (on a well/meter basis) for the gas removed from the lease. The gallons per Mcf (GPM) of each recoverable NGL; e.g., ethane, propane, butane, etc., are multiplied by the well head volume (wet gas volume) in Mcf.
- To calculate the NGL's recovered at the gas plant, the payor would multiply the theoretical available NGL volumes by the appropriate plant efficiencies. The information on plant efficiencies comes from the plant operator.

### Theoretical Residue Gas Calculations

- The theoretical residue gas volume can be calculated by subtracting the plant fuel, flare, and shrinkage volumes from the wet gas volume. The first

step is to convert the recovered NGL's volume to equivalent gas volumes in Mcf and MMBtu by using the tables in the "Gas Processors Suppliers Association Engineering Data Book," vol. 11, figure 23-2, p. 23-3, 23-4, Tenth Edition 1987"

- The theoretical residue gas volume is then calculated by subtracting the Mcf or MMBtu equivalent NGL volume and the plant fuel/incidental flaring volumes (also in Mcf or MMBtu as appropriate) that would be incurred during processing from the wet gas volume expressed in Mcf or MMBtu. Plant fuel and flare volumes (usually a percentage of plant inlet or residue gas volumes) come from the plant operator.

#### Residue Gas and NGL Valuation

- With the calculated residue gas volumes, the value of the residue gas would be determined by the well head gas price in \$/MMBtu multiplied by the calculated MMBtu's of residue gas.
- The NGL's would be determined by information regarding prices for the area in which the plant is located. If information for sales at the plant is unavailable, NGL prices in commercial bulletins; i.e., Platt's Oilgram Price Report, BPN's Weekly Propane Newsletter, etc., for either Mont Belvieu, Texas, or Conway, Kansas, may be used, with a deduction for fractionation costs, provided only a raw make is produced at the plant. Fractionation costs would be those representative of the costs incurred by fractionation plant operators in the area where the posted price is valid.

#### Transportation Allowances

- Because the wellhead price under the arm's-length contract reflects the residue gas value at the wellhead, a transportation allowance for the residue gas will normally not be allowed when determining its value.
- A transportation allowance for both pre- and post-plant transportation of the NGL's would be necessary depending upon the point at which the value of the NGL is established. The pre-plant transportation allowance is for the charges the payor would incur to transport the estimated recovered NGL's and the plant fuel/flare from the lease to the plant. The post-plant transportation allowance is for the charge the payor would incur to transport the NGL's from the plant to the point of valuation if away from the plant. Both charges are obtained from either published tariffs or from the pipeline company directly.

#### Processing Allowance

- The processing allowance is determined by the actual costs incurred by the party processing the gas. It may be the plant owner's cost calculated and reported to the Royalty Valuation and Standards Division (RVSD), MMS, or an arm's-length charge to the initial purchaser if not the plant owner. The

processing allowance is limited to 66-2/3 percent of the value of the NGL's unless, for the periods after March 1, 1988, an exception is granted by MMS.

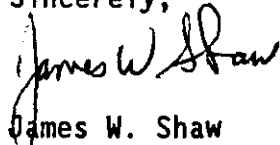
#### Dual Accounting

- The value derived for the processed gas using the theoretical method would be compared with the value of the unprocessed gas determined under 30 CFR § 206.152 (1991). The payor would report on the higher of the two.

The MMS stresses that the payor must make every effort to obtain the information required to accurately determine values of production under all applicable regulations. However, in the event that the payor is unable to obtain any or all of the required information regarding gas plant efficiencies, processing charges, or transportation charges, the payor may contact RVSD and request assistance. The RVSD will provide the actual data when it is available and release is authorized or allowed by Federal law. The MMS also stresses that when the value of the processed gas determined under 30 CFR § 206.153 (1991) is higher than the value of the unprocessed gas, the requirements to submit appropriate allowance forms prior to claiming transportation and/or processing allowances must be met. (See 30 CFR §§ 206.156 through 206.159 (1991).)

For further information regarding the theoretical dual accounting method, please contact Mr. John Price at (303) 231-3392.

Sincerely,



James W. Shaw  
Associate Director for  
Royalty Management

Enclosure

## CALCULATIONS USED IN THEORETICAL DUAL ACCOUNTING

### Natural Gas Liquid (NGL) Volume

$$\text{NGL volume (gal)} = \text{wet gas volume (Mcf)} \times \text{NGL content (gal/Mcf)}$$

$$\text{recoverable NGL volume (gal)} = \text{NGL volume (gal)} \times \text{plant efficiency}$$

### Residue Gas Volume

$$\text{residue gas volume (Mcf)} = \text{wet gas volume (Mcf)} - \text{NGL volume (Mcf)} - \text{plant fuel/flare (Mcf)}$$

$$\text{residue gas volume (MMBtu)} = \text{wet gas volume (MMBtu)} - \text{NGL volume (MMBtu)} - \text{Plant fuel/flare (MMBtu)}$$

### Residue Gas and NGL Valuation

$$\text{residue gas value (\$)} = \text{residue gas (MMBtu)} \times \text{wet gas price (\$/MMBtu)}$$

$$\text{NGL value (\$)} = \text{NGL (gal)} \times \text{respective NGL price (\$/gal)}$$

### NGL Transportation Allowances

$$\text{pre-plant allowance (\$)} = (\text{NGL volume (Mcf)} + \text{plant fuel/flare (Mcf)}) \times \text{transportation charge (\$/Mcf)}$$

$$\text{post-plant allowance (\$)} = \text{NGL volume (gal)} \times \text{transportation charge (\$/gal)}$$

### Processing Allowance

$$\text{processing allowance (\$)} = \text{NGL volume (gal)} \times \text{processing costs (\$/gal)}$$

### Dual Accounting

$$\text{processed gas value} = \text{residue gas value (\$)} + \text{NGL value (\$)} - (\text{pre-plant NGL transportation allowance (\$)} + \text{post-plant NGL transportation allowance (\$)} + \text{NGL processing allowance (\$)})$$

$$\text{unprocessed gas value} = \text{wet gas volume (MMBtu)} \times \text{wellhead sales contract price (\$/MMBtu)}$$

$$\text{processed gas value} \Leftrightarrow \text{wet gas value}$$