

Section 2

Table of Contents

1	DA.OPT Dtd 2/26/1997	LTR to Mr. Randall	Dual Accounting on Indian Leases
2	DEREG.XLS	Spreadsheet- Sheet1	Excel from Nov-78 to Jan-93
3	DLACTNG.XLS	Spreadsheets	4 Sheets on Direction/Blank Sheet/Ex. Report Format & Report Format
4	DUAL_98D.XLS	Spreadsheets	3 Encl, Direction/Theoretical/Processed Sales
5	DUAL_98E.XLS	Spreadsheets	3 Encl, Direction/Theoretical/Processed Sales, with changes onpg 1
6	DUAL198.XLS	Spreadsheets	9 Encl, Each titled Blank, Direction, wellhead 2, processed & wellhead 1.
7	ELPASO2.XLS	Spreadsheets	Sheet 1 w/dates & prices, Sheet 2 with Jicarilla Major Portion (MP) Prices
8	ELPASO3.XLS	Notes & Spreadsheets	Footnotes for pg 1 of Jicarila MP pricing Calculation & SS Jicarilla MP prices
9	ENCL4WO.XLS	Spreadsheet	Encl 4, dual accounting example without plant efficiency factor.
10	ISSUES.01	Discussion Items	From Jicarilla OTP
11	MPDAMR1.JAT Dtd 2/17/1998	Methology Jicarilla Apache	Dual Accounting Analysis 10 pages With List of Attachments on back
12	MPDAMR1B.JAT Dtd 2/17/1998	Methology Jicarilla Apache	Dual Accounting Analysis 9 pages With List of Attachments on back
13	MPDAMR1C.JAT Dtd 2/17/1998	Methology Jicarilla Apache	Exactly the same date & Methology as #12
14	MPDAMR1D.JAT Dtd 3/2/1998	Methology Jicarilla Apache	Same Methology with directory line added to page 8 updated in March 2, 1998.
15	MPDAMR1E.JAT Dtd 3/2/1998	Methology Jicarilla Apache	Exactly the same date & Methology as #14
16			
17			
18			
19			
20			
21			
22			
23			

MMS-DAD/C
MS 3600
DA5-038

CERTIFIED MAIL--
RETURN RECEIPT REQUESTED

Mr. Steve Randall
Case Sales Co. Inc.
P.O. Box 338
Tonkawa, Oklahoma 74653

Re: Dual Accounting on Indian Leases

Dear Mr. Randall:

The Minerals Management Service (MMS) is conducting a review of dual accounting on Indian leases. MMS issued an order to Case Sales Co. Inc. (Case) to provide a declaration of policy on dual accounting. On the March 11, 1996 response, Case stated that the company did not perform dual accounting on the Indian leases for which Case is a royalty payor. Based on the review of a sample lease under section 3(c) entitled "Rental and Royalty", we determined that the lease terms require dual accounting. Our review shows that, Case did not perform dual accounting calculations in determining royalties due on the lease and, as a result, additional royalties may be due.

Dual accounting requirements are specified by Indian lease terms, Federal regulations, and MMS' instructions. Federal regulations at 25 CFR §§ 211.13 (1996) and 212.16 (1996) state:

In determining the value for royalty purposes of products, such as natural gasoline, that are derived from treatment of gas, a reasonable allowance for the cost of manufacture shall be made, such allowance to be two-thirds of the value of the marketable product unless otherwise determined by the Secretary of the Interior on application of the lessee or on his own initiative, and that royalty will be computed on the value of gas or casinghead gas, or on the products thereof (such as residue gas, natural gasoline, propane, butane, etc.), whichever is the greater [Emphasis added.]

Dual accounting is defined as a valuation method that compares the value of the gas prior to processing, as determined under 30 CFR § 206.152 (1996), to the value of that same gas after processing (the combined values of the residue gas and gas plant products), as determined under 30 CFR § 206.153 (1996). Where the specific provisions of a lease are inconsistent with these regulations, then the lease agreement shall govern to the extent of that inconsistency.

By "Dear Payor" letter dated September 30, 1988 (Enclosure 1), MMS emphasized the requirement with notice that failure to comply with Indian lease terms and the regulations applicable to dual accounting would subject payors to enforcement actions by MMS, including civil penalties as provided by 30 CFR § 241.51 (1996).

Royalty on gas produced from an Indian lease and ultimately processed (either by the lessee or any purchaser) must be computed by applying the dual accounting requirements specified by the lease. Value for the wellhead (unprocessed) stream is determined by the Btu method. The net realization method is used to determine

the value of the processed stream. Indian royalty is to be calculated and paid based on the method yielding the higher value. However, royalty is never to be based on a value which is less than the gross proceeds received by the lessee.

For the Btu method, the volume of the unprocessed gas is measured at the wellhead and the Btu content is determined. The value of the gas is then calculated by multiplying the volume (adjusted for its Btu content) by the appropriate unit price.

In comparison, the net realization method determines the value of the gas based on the components of the gas. The aggregate of the values is determined and a processing allowance (not to exceed two-thirds of the total NGL value) is subtracted. After March 31, 1988, if royalties are paid pursuant to the processed gas valuation method, 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 (1996)).

Therefore, in order to comply with regulations and lease terms, within 60 days of receipt of this letter, Case is ordered to perform the following:

1. For each Indian lease for which the dual accounting requirement is specified in the lease terms, Case is hereby directed to recalculate royalties following the dual accounting requirements from January 1990 through the current production month. For those months listed on Enclosure 2, MMS has calculated majority prices for lease numbers 505-045579-0 and 607-003647-0. Case must use the higher of the MMBtu prices listed on Enclosure 2 or the gross proceeds MMBtu price received for wellhead and the residue gas values in the dual accounting calculations.

If Case is unable to obtain the necessary information to perform dual accounting as required by the lease terms, Case is directed to apply the theoretical dual accounting as explained in the MMS' "Dear Payor" letter dated July 27, 1992 (Enclosure 3). MMS has provided a worksheet for theoretical dual accounting calculations and a diskette with the Excel worksheet on it in order to assist Case in completing dual accounting calculations (Enclosure 4). If needed, MMS can provide assistance in completing these calculations.

2. Compare royalties due as calculated in step (1) to royalties previously paid for each month and pay any additional royalties due. All such redeterminations are to be documented in the format shown in Enclosure 4.

Your payments should be made in accordance with the regulations at 30 CFR § 218.51 (1996), and accompanied by an appropriately completed green Form MMS-2014 (Enclosure 5). A copy of your payment and the green Form MMS-2014 should be sent to the address shown below.

Appropriate late payment charges pursuant to 30 CFR § 218.102 (1996) will be computed and billed to Case upon receipt of payment of any additional royalties due.

All documentation supporting your compliance with this order should be retained until MMS completes its follow-up compliance testing. After the period covered by this order, Case should continue to value production for royalty purposes in accordance with regulations and guidelines discussed in this order. If MMS determines that the required accounting has not been performed, or the future royalty payments do not comply with this order, the violation may be considered willful.

Section 109 of the Federal Oil and Gas Royalty Management Act of 1982 (FOGRMA), promulgated in 30 CFR § 241.51 (1996), authorizes MMS to assess civil penalties for failure or refusal to comply with the requirements of FOGRMA or any statute, regulation, rule, order, lease, or permit. Consequently, your failure to comply with the terms of this order may be considered a violation pursuant to 30 CFR § 241.51 (1996) and could subject you to appropriate penalties as provided therein.

You have the right to appeal in accordance with the provisions of 30 CFR 290 (1996). Any appeal taken will be to the Deputy Commissioner of Indian Affairs and must be filed within 30 days from the receipt of this order at the following address:

Mr. Kenneth M. Moyers, Chief
Compliance Office
Minerals Management Service
P.O. Box 25165, Mail Stop 3600
Denver, Colorado 80225-0165

Any notice of appeal must be accompanied by written statement of reasons, as you deem adequate to justify reversal or modification of this directive. Within 90 days from receipt of this order, the appellant will be permitted to file additional statement of reasons or written briefs.

With the exception of the time fixed for filing a notice of appeal, the time for filing any document in connection with an appeal may be extended. Extensions for filing the statement of reasons will not be permitted unless requested in writing by the appellant (within the 30-day period allowed for filing the appeal) with justification showing good cause for the time extension and taken to Kenneth M. Moyers at the above address.

In accordance with the provisions of 30 CFR § 243.2 (1996), compliance with this order will be suspended by reason of an appeal having been taken.

If you have any questions, contact Ms. Teresa Morzos at (303) 231-3848.

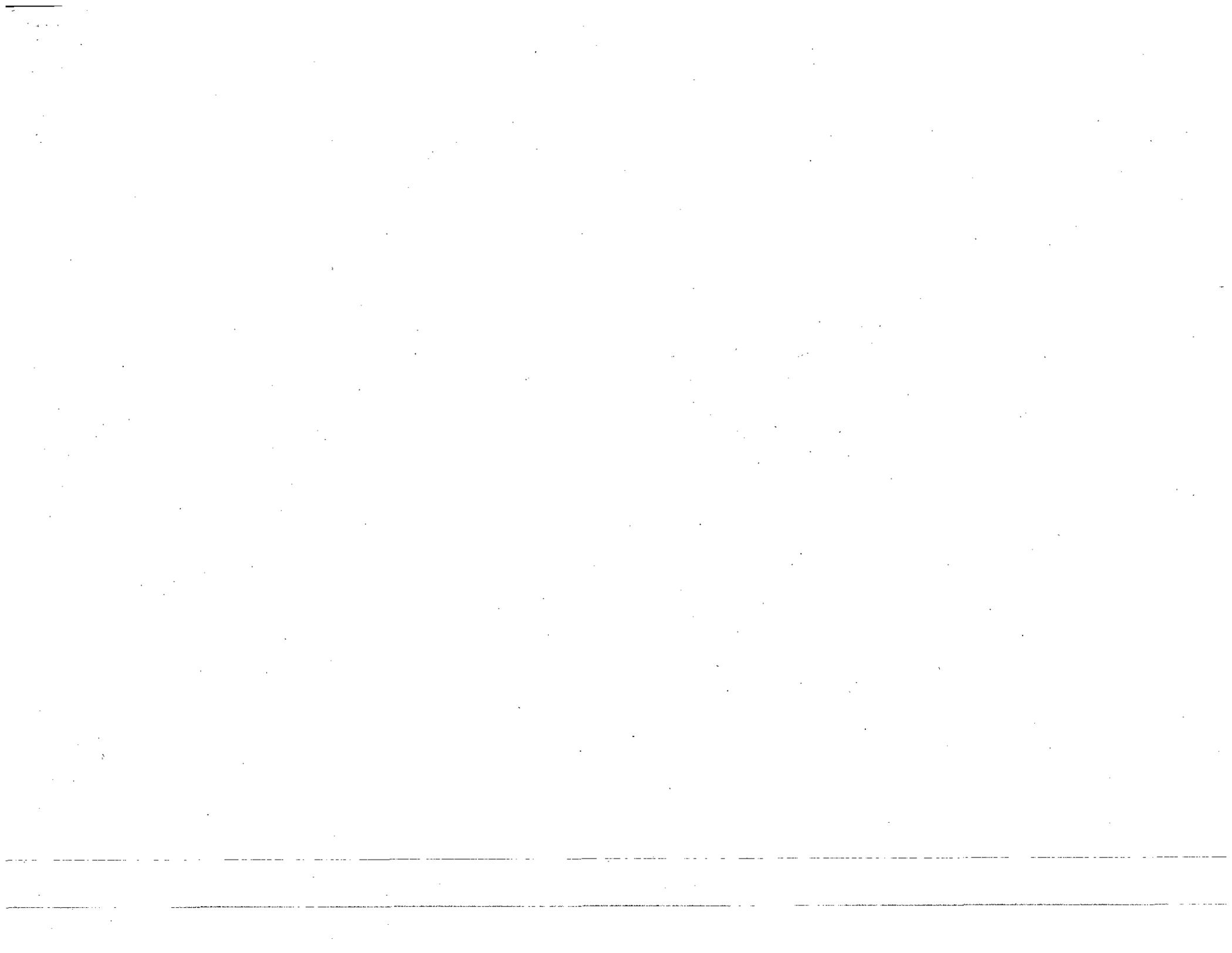
Sincerely,

Kenneth M. Moyers
Compliance Office

Enclosures

bcc: RM File
RM Chron Lkwd/DC (2)
DAD/C Chron

LMS:RMP:DAD/C:MBlythe:rt:CASE.OTP:final:02/26/97



Sheet1

			Nov-78	Dec-79	Jan-85	Jul-87	Jul-87	May-91	Jan-93
New OCS gas	102 c 1 A	1/1/1985							
New onshore well (1000 ft deeper)	102 c 1 B	1/1/1985							
New onshore well (2.5 mi rule)	102 c 1 B	1/1/1985							
new onshore reservoir gas	102 c 1 C	1/1/1985							
wells spudded 7/89	102 d	5/15/1991							
new reservoirs on old leases	102 d	1/1/1993							
wells spudded 7/89	103	5/15/1991							
new onshore	103 b 2	7/1/1987							
new onshore/>5000/Apr 77	103 c	1/1/1985							
wells spudded 7/89	104	5/15/1991							
wells spudded 1/75 to 2/77	104	1/1/1993							
73-74 biennium	104	1/1/1993							
wells spudded prior to 1/73	104	1/1/1993							
special relief gas	104	1/1/1993							
existing intrastate	105	1/1/1985							
existing contract	105	1/1/1993							
interstate rollover	106 a	5/15/1991							
interstate rollover	106 a	1/1/1993							
intrastate rollover	106 b	1/1/1985							
intrastate rollover	106 b 1 B	1/1/1993							
Deep high cost gas	107 c 1	11/1/1979							
Geopressed Brines	107 c 2	11/1/1979							
Coal seam	107 c 3	11/1/1979							
Devonian shales	107 c 4	11/1/1979							
tight/dual qual under 102 & 103	107 c 5	1/1/1985							
wells spudded 7/89	107 c 5	5/15/1991							
stripper	108	1/1/1985							
wells spudded 7/89	108	5/15/1991							
Other new wells	109 a 1	1/1/1993							
certain intrastate	109 a 2	1/1/1993							
behind the pipe/withheld	109 a 3	1/1/1993							
prudhoe bay	109 a 4	1/1/1993							
all other	109 a	1/1/1993							

Enter the highlighted values as shown.
The spreadsheet will calculate the dual accounting values

Enter Lease here: 123-XXXX-ABC
 Enter well name and production month: DUAL ACCOUNTING EXAMPLE WELL, Jan-90
 AS Reported on Form MMS -2014: AS provided by MMS
 If appropriate allowance forms have been filed: If no forms have been filed use zero(0): 0.00%
 As percentage of residue MMBtu as provided by processing plant: 5.00%

WELLHEAD GROSS PROCEEDS	WELLH. MCF	WELLHEAD BTU	WELLHEAD MMBTU	CONDENSATE VALUE	WELL HEAD PRICE MMBTU	MAJOR PORTION PRICE MMBTU	MANUFACT. ALLOWANCE	FUEL & FLARE	GROSS RESIDUE MMBTU	FUEL & FLARE MMBTU	NET RESIDUE MMBTU	
1	2	3	4	5	6	7	8	9	10	11	12	
\$235.00	72.10	1,224	88.25	\$0.00	\$2.66	\$2.50	0.00%	5.00%	50.45	2.52	47.93	
	GPM	GPM @14.73	WELLHEAD MCF	THEORET. PRODUCT GALLONS	PLANT EFFICIENCY FACTOR	PRODUCT GALLONS	MMBTU PER GALLON	THEOR LIQUID MMBTU	MNFCTRNG ALLWNCE GALLONS	FINAL PRODUCT GALLONS	NGL PRICE \$/GAL	NGL VALUE C10 x C9
	@14.65	C2X1.0055	@14.73	(COL 3 X 4)				COL 7x 8		C7-C10		
ETHANE	2.243	2.25534	72.10	162.61	80.0%	130.088	0.06587	8.6	0.00	130.09	\$0.1413	\$18.37
PROPANE	2.007	2.01804	72.10	145.50	80.0%	116.401	0.09093	10.6	0.00	116.40	\$0.6350	\$73.91
NOR-BUTANE	1.029	1.03466	72.10	74.60	99.5%	74.226	0.10291	7.6	0.00	74.23	\$0.3838	\$28.48
ISO-BUTANE	0.411	0.41326	72.10	29.80	99.5%	29.647	0.09892	2.9	0.00	29.65	\$0.4375	\$12.97
ISO-PENTANE	0.34	0.34187	72.10	24.65	99.5%	24.526	0.10881	2.7	0.00	24.53	\$0.4100	\$10.06
NOR-PENTANE	0.321	0.32277	72.10	23.27	99.5%	23.155	0.11009	2.5	0.00	23.16	\$0.4100	\$9.49
HEXANE	0.344	0.34589	72.10	24.94	99.5%	24.814	0.11502	2.9	0.00	24.81	\$0.4100	\$10.17
TOTAL								37.8				\$163.45
	WELLHEAD GROSS PROCEEDS	WELLHEAD MP VALUE(1)	RESIDUE VALUE(2)	CONDENSATE VALUE	NGL VALUE	PROCESSED VALUE(3)	HIGHEST VALUE(4)					
	\$235.00	\$220.63	\$127.50	\$0.00	\$163.45	\$290.95	\$290.95					

As provided by gas stream analysis at wellhead: \$235.00
 As provided by the plant: \$0.00
 Enter NGL Prices: \$0.4100
 Highest Value: PROCESSED \$290.95
 Difference from Well Head Gross Proceeds (Add. Royalty Due): \$55.95

- (1) Wellhead MMBtu x Major Portion (MP) Price
- (2) Based on the greater of wellhead gross proceeds \$/MMBtu price or major portion \$/MMBtu price times net residue MMBtu
- (3) Residue Value + NGL Value + Condensate Value
- (4) The greater of Wellhead Gross Proceeds, Wellhead Major Portion, or Processed Value

This value is the additional royalty due on the well. If zero, there is no additional royalty due.

123-XXXX-ABC DUAL ACCOUNTING EXAMPLE WELL

Jan-90

WELLHEAD GROSS PROCEEDS	WELLH. MCF	WELLHEAD BTU	WELLHEAD MMBTU	CONDENSATE VALUE	WELL HEAD PRICE MMBTU	MAJOR PORTION PRICE MMBTU	MANUFACT. ALLOWANCE	FUEL & FLARE	GROSS RESIDUE MMBTU	FUEL & FLARE MMBTU	NET RESIDUE MMBTU		
<u>\$0.00</u>	<u>0.00</u>	<u>0.000</u>	0.00	<u>\$0.00</u>	#DIV/0!	<u>\$0.00</u>	<u>0.00%</u>	<u>5.00%</u>	0.00	0.00	0.00		
1	2	3	4	5	6	7	8	9	10	11	12	13	
	GPM	GPM @14.73	WELLHEAD MCF	THEORET. PRODUCT GALLONS	PLANT EFFICIENCY FACTOR	PRODUCT GALLONS	MMBTU PER GALLON	THEOR LIQUID MMBTU	MNFCTRNG ALLWNC	FINAL PRODUCT GALLONS	NGL PRICE \$/GAL	NGL VALUE C10 x C9	
PRODUCT	@14.65	C2X1.0055	@14.73	(COL 3 X 4)				COL 7x 8		C7-C10			
ETHANE	0	0.00000	0.00	0.00	80.0%	0.000	0.06587	0.0	0.00	0.00	\$0.0000	\$0.00	
PROPANE	0	0.00000	0.00	0.00	80.0%	0.000	0.09093	0.0	0.00	0.00	\$0.0000	\$0.00	
NOR-BUTANE	0	0.00000	0.00	0.00	99.5%	0.000	0.10291	0.0	0.00	0.00	\$0.0000	\$0.00	
ISO-BUTANE	0	0.00000	0.00	0.00	99.5%	0.000	0.09892	0.0	0.00	0.00	\$0.0000	\$0.00	
ISO-PENTANE	0	0.00000	0.00	0.00	99.5%	0.000	0.10881	0.0	0.00	0.00	\$0.0000	\$0.00	
NOR-PENTANE	0	0.00000	0.00	0.00	99.5%	0.000	0.11009	0.0	0.00	0.00	\$0.0000	\$0.00	
HEXANE	0	0.00000	0.00	0.00	99.5%	0.000	0.11502	0.0	0.00	0.00	\$0.0000	\$0.00	
TOTAL								0.0					

WELLHEAD GROSS PROCEEDS	WELLHEAD MP VALUE(1)	RESIDUE VALUE(2)	CONDENSATE VALUE	NGL VALUE	PROCESSED VALUE(3)	HIGHEST VALUE(4)
\$0.00	\$0.00	#DIV/0!	\$0.00	\$0.00	#DIV/0!	#DIV/0!

Highest Value: #DIV/0!
 Difference from Well Head Gross Proceeds (Add. Royalty Due): #DIV/0!

- (1) Wellhead MMBtu x Major Portion (MP) Price
- (2) Based on the greater of wellhead gross proceeds \$/MMBtu price or major portion \$/MMBtu price times net residue MMBtu
- (3) Residue Value + NGL Value + Condensate Value
- (4) The greater of Wellhead Gross Proceeds, Wellhead Major Portion, or Processed Value

123-XXXX-ABC DUAL ACCOUNTING EXAMPLE WELL

Jan-90

WELLHEAD GROSS PROCEEDS	WELLH. MCF	WELLHEAD BTU	WELLHEAD MMBTU	CONDENSATE VALUE	WELL HEAD PRICE MMBTU	MAJOR PORTION PRICE MMBTU	MANUFACT. ALLOWANCE	FUEL & FLARE	GROSS RESIDUE MMBTU	FUEL & FLARE MMBTU	NET RESIDUE MMBTU		
1	2	3	4	5	6	7	8	9	10	11	12	13	
	GPM	GPM @14.73	WELLHEAD MCF @14.73	THEORET. PRODUCT GALLONS (COL 3 X 4)	PLANT EFFICIENCY FACTOR	PRODUCT GALLONS	MMBTU PER GALLON	THEOR LIQUID MMBTU COL 7x8	MNFCTRNG ALLWNCE GALLONS	FINAL PRODUCT GALLONS C7-C10	NGL PRICE \$/GAL	NGL VALUE C10 x C9	
\$235.00	72.10	1.224	88.25	\$0.00	\$2.66	\$2.75	0.00%	5.00%	50.45	2.52	47.93		
ETHANE	<u>2.243</u>	2.25534	72.10	162.61	<u>80.0%</u>	130.088	0.06587	8.6	0.00	130.09	\$0.1413	\$18.37	
PROPANE	<u>2.007</u>	2.01804	72.10	145.50	<u>80.0%</u>	116.401	0.09093	10.6	0.00	116.40	\$0.6350	\$73.91	
NOR-BUTANE	<u>1.029</u>	1.03466	72.10	74.60	<u>99.5%</u>	74.226	0.10291	7.6	0.00	74.23	\$0.3838	\$28.48	
ISO-BUTANE	<u>0.411</u>	0.41326	72.10	29.80	<u>99.5%</u>	29.647	0.09892	2.9	0.00	29.65	\$0.4375	\$12.97	
ISO-PENTANE	<u>0.34</u>	0.34187	72.10	24.65	<u>99.5%</u>	24.526	0.10881	2.7	0.00	24.53	\$0.4100	\$10.06	
NOR-PENTANE	<u>0.321</u>	0.32277	72.10	23.27	<u>99.5%</u>	23.155	0.11009	2.5	0.00	23.16	\$0.4100	\$9.49	
HEXANE	<u>0.344</u>	0.34589	72.10	24.94	<u>99.5%</u>	24.814	0.11502	2.9	0.00	24.81	\$0.4100	\$10.17	
TOTAL								37.8				\$163.45	
	WELLHEAD GROSS PROCEEDS	WELLHEAD MP VALUE(1)	RESIDUE VALUE(2)	CONDENSATE VALUE	NGL VALUE	PROCESSED VALUE(3)	HIGHEST VALUE(4)						
	\$235.00	\$242.69	\$131.81	\$0.00	\$163.45	\$295.26	\$295.26						

Highest Value: PROCESSED

Difference from Well Head Gross Proceeds (Add. Royalty Due): \$60.26

- (1) Wellhead MMBtu x Major Portion (MP) Price
- (2) Based on the greater of wellhead gross proceeds \$/MMBtu price or major portion \$/MMBtu price times net residue MMBtu
- (3) Residue Value + NGL Value + Condensate Value
- (4) The greater of Wellhead Gross Proceeds, Wellhead Major Portion, or Processed Value

Report Format

Company _____

Lease 123-XXXX-ABC

Well Name **DUAL ACCOUNTING EXAMPLE WELL**

DATE	HIGHEST VALUE	Processed Wh Gross Proceeds Major Portion	ROYALTY PAID	ADDITIONAL ROYALTY DUE
9001	\$ 293.10	Processed	\$ 193.24	\$ 99.86
9002	\$ 231.84	Processed	\$ 193.24	\$ 38.60
9003	\$ 160.92	Processed	\$ 93.40	\$ 67.52
9004	\$ 182.38	Processed	\$ 115.10	\$ 67.28
9005	\$ 96.06	Wh Gross Proceeds	\$ 96.06	\$ -
9006	\$ 196.37	Processed	\$ 129.37	\$ 67.00
9007	\$ 181.11	Processed	\$ 100.48	\$ 80.63
9008	\$ 100.25	Major Portion	\$ 90.84	\$ 9.41
9009	\$ 278.48	Processed	\$ 96.03	\$ 182.45
9010	\$ 301.14	Processed	\$ 102.83	\$ 198.31
9011	\$ 255.68	Processed	\$ 115.55	\$ 140.13
9012	\$ 253.55	Processed	\$ 133.24	\$ 120.31
TOTAL				\$ 1,071.50

This workbook consists of two worksheets

Each worksheet consists of 4 types of information

Part A: This area is for wellhead sales

Part B: This area is for calculating the major portion value

Part C: This area is for calculating the processed gas value

Part D: This area is for calculating gross proceeds

The spreadsheet will then do the dual accounting comparison and calculate additional royalties

Theoretical: This spreadsheet is used to perform theoretical dual accounting for wellhead sales

Actual wellhead sales values are entered into parts A and major portion data is entered in Part B.

Theoretical values are entered into part C and Gross Proceeds data is entered in part D.

Processed Sales: This spreadsheet is used when the gas is sold processed or if information on the processed sales is available.

For gas that is sold **processed:**

Actual values are entered in Parts C and D. Values from a comparable wellhead contract are entered in Part A and Major portion data is entered in Part B.

For gas that is sold **at the wellhead** and **actual plant statements are available**

Enter the wellhead sales data in Part A and major portion data in Part B.

Enter the plant sales data in part C and Gross Proceeds data in Part D.

DUAL ACCOUNTING GAS SOLD AT WELLHEAD (NO PROCESSED INFORMATION)

LEASE 609-000XXX-0

SALES MO/YR 01/1990

WELL API 3003912345

WELL NAME-NUMBER Tribal 7-a

WELL NGPA CLASSIFICATION 10X

PART A UNPROCESSED GAS "BTU METHOD" VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHEAD PRICE (3) \$/MMBTU	GROSS VALUE	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.15	\$13,491.25	16.67%	\$2,248.99 <A>

PART B WELLHEAD MAJOR PORTION VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHD MAJOR PORTION PRICE \$/MMBTU	MAJOR PORTION VALUE (5)	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.552	\$16,013.80	16.67%	\$2,669.50

PART C PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)

PRODUCT (9)	WELLHEAD VOLUME MCF	GPM (6)	THEOR. PRODUCT GALLONS (7)	PLANT EFFICIENCY FACTOR	ACTUAL PRODUCT GALLONS (8)	MMBTU PER GALLON (9)	THEOR LIQUID MMBTU (10)	NGL PRICE \$/GAL (11)	NGL VALUE
ETHANE	5,000	2.25534	11,276.70	85.0%	9,585.20	0.065889	631.56	\$0.2050	\$1,964.97
PROPANE	5,000	2.01804	10,090.20	85.0%	8,576.67	0.090962	780.15	\$0.5100	\$4,374.10
N-BUTANE	5,000	1.03466	5,173.30	99.5%	5,147.43	0.102918	529.76	\$0.3575	\$1,840.21
ISO-BUTANE	5,000	0.41326	2,066.30	99.5%	2,055.97	0.098968	203.48	\$0.4900	\$1,007.43
NAT. GASOLINE (Pentane+)	5,000	1.01053	5,052.65	99.5%	5,027.39	0.110071	553.37	\$0.4725	\$2,375.44
TOTAL			33,659.15		30,392.7		2,698.3		\$11,562.15

Plant Tailgate MMBtu Price	\$2.80	Transportation Rate per Gallon (12)	\$0.00	Maximum Allowance Allowed (16)	\$0.19	Net NGL Value (13)	\$9,434.66
Less Transportation (12)	\$0.45	Trans Reduced Value	\$11,562.15			Condensate Value	\$327.00
Residue Gas MMBtu Price:	\$2.35	Processing Rate per Gallon (12)	\$0.07		\$0.25	Theor. Residue Gas value (14)	\$9,127.69
Theoretical Residue Gas MMBtu (15)	3,576.68	Proc Reduced Value	\$9,434.66			Total Processed Gas Value	\$18,889.35
Higher of Residue or Major Portion MMBtu Price	\$2.552					Royalty Rate	16.67%
						Processed Gas Royalty Value (4)	\$3,148.85 <C>

PART D GROSS PROCEEDS

GROSS PROCEEDS	ROYALTY RATE	GROSS PROCEEDS ROYALTY VALUE (4)
\$16,744.00	16.67%	\$2,791.22 <D>

Note: Sales by affiliates may provide information concerning gross proceeds to the lessee or the appropriate benchmark value and thus may be considered in determining royalty values.

Highest Royalty Value of <A>, , <C>, or <D> based on PROCESSED GAS "NET REALIZATION METHOD" VALUE
 Less Royalty Paid \$2,248.99

Additional Royalty DUE \$899.86

(1) All volumes and Btu factors are at 14.73 psia.

(2) Wellhead volume times Wellhead Btu factor.

(3) Gross Value divided by wellhead MMBtu.

(4) Royalty rate times Value.

(5) Wellhead volume (MMBTU) times major portion price.

(6) From gas analysis.

(7) Wellhead volume times gas stream analysis.

(8) Theoretical product gallons times plant efficiency factor.

(9) Physical Constants of Hydrocarbons (1996 Engineering data book) N-pentane factor was used for natural gasoline, which is 70% N-pentane

(10) Product Gallons time physical constant.

(11) From Average NGL Prices worksheet supplied with Order to Perform.

(12) After March 1, 1988, allowance can only be claimed if appropriate allowance forms have been filed with MMS.

(13) Actual product gallons times NGL price less transportation and processing allowances.

(14) Theoretical Residue gas volume times the higher of residue gas value or major portion price.

(15) Wellhead MMBtu less Theoretical Liquid MMBtu.

(16) Tran. Allow. cannot exceed 50% of the value of the NGLs and Proc. Allow. cannot exceed 66.67% of the tran. adj value of the NGLs.

**DUAL ACCOUNTING GAS SOLD PROCESSED
DUAL ACCOUNTING GAS SOLD AT WELLHEAD (PROCESSED INFORMATION AVAILABLE)**

<u>LEASE</u> 609-000XXX-0		<u>WELL API</u> 3003912345	
<u>SALES MO/YR</u> 01/1990			
<u>WELL NAME-NUMBER</u> Tribal 7-a		<u>WELL NGPA CLASSIFICATION</u> 10X	

PART A UNPROCESSED GAS "BTU METHOD" VALUE (1)							
<u>WELLHEAD VOLUME (MCF)(2)</u>	<u>WELLHEAD BTU</u>	<u>WELLHEAD MMBTU (3)</u>	<u>WELLHEAD PRICE (4) \$/MMBTU</u>	<u>GROSS VALUE (5)</u>	<u>ROYALTY RATE</u>	<u>ROYALTY VALUE (6)</u>	
5,000	1,255	6,275	\$2.40	\$15,060.00	16.67%	\$2,510.50	<A>

PART B WELLHEAD MAJOR PORTION VALUE (1)							
<u>WELLHEAD VOLUME (MCF)</u>	<u>WELLHEAD BTU</u>	<u>WELLHEAD MMBTU (3)</u>	<u>WELLHD MAJOR PORTION PRICE \$/MMBTU</u>	<u>MAJOR PORTION VALUE (7)</u>	<u>ROYALTY RATE</u>	<u>ROYALTY VALUE (6)</u>	
5,000	1,255	6,275	\$2.552	\$16,013.80	16.67%	\$2,669.50	

PART C PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)							
<u>PRODUCT</u>	<u>ACTUAL PRODUCT GALLONS (8)</u>	<u>NGL PRICE \$/GAL (8)</u>	<u>NGL VALUE (10)</u>				<u>Maximum Allowance Allowed (13)</u>
ETHANE	9,482.00	\$0.2050	\$1,943.81	Transportation Rate per Gallon(9)	\$0.00		\$0.19
PROPANE	9,600.00	\$0.5100	\$4,896.00	Trans Reduced Value	\$12,095.51		
N-BUTANE	5,300.00	\$0.3575	\$1,894.75	Processing Rate per Gallon(9)	\$0.07		\$0.26
ISO-BUTANE	2,001.00	\$0.4900	\$980.49	Proc Reduced Value	\$9,896.04		
NAT. GASOLINE	5,038.00	\$0.4725	\$2,380.46				
TOTAL	31,421.0		\$12,095.51				
	Plant Tailgate MMBtu Price(8)	\$2.80		Net NGL Value (12)	\$9,896.04		
	Less Transportation(9)	\$0.45		Condensate Value	\$327.00		
	Residue Gas MMBtu Price:	\$2.35		Residue Gas value (11)	\$9,125.95		
	Residue Gas MMBtu (8)	3,576.00		Total Processed Gas Value	\$19,348.99		
	Higher of Residue or Major Portion MMBtu Price	\$2.552		Royalty Rate	16.67%		
				Processed Gas Royalty Value (6)	\$3,225.48	<C>	

PART D GROSS PROCEEDS				
<u>GROSS PROCEEDS</u>	<u>ROYALTY RATE</u>	<u>GROSS PROCEEDS ROYALTY VALUE(6)</u>		
\$16,744.00	16.67%	\$2,791.22	<D>	

Highest Royalty Value of <A>, , <C>, or <D>	\$3,225.48	based on	PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)
Less Royalty Paid	\$2,510.50		
Additional Royalty DUE	\$714.98		

(1) All volumes and Btu factors are at 14.73 psia.
 (2) From 3160 measured at royalty settlement point.
 (3) Wellhead volume times Wellhead Btu factor.
 (4) Gross Value of comparable contract divided by wellhead MMBtu.
 (5) Actual Gross Value or Gross Value from a comparable contract.
 (6) Royalty rate times Value.
 (7) Wellhead volume (MMBtu) times major portion price.
 (8) From plant statement.
 (9) After March 1, 1988, allowance can only be claimed if appropriate allowance forms have been filed with MMS.
 (10) Actual product gallons times NGL price.
 (11) Residue Gas volume times higher of residue gas price or major portion price.
 (12) Actual product gallons times NGL price less transportation and processing allowance.
 (13) Tran. Allow. cannot exceed 50% of the value of the NGLs and Proc. Allow. cannot exceed 66.67% of the tran. adj value of the NGLs.

This spreadsheet consists of two worksheets

Each worksheet consists of 4 types of information

Part A: This area is for wellhead sales

Part B: This area is for calculating the major portion value

Part C: This area is for calculating the processed gas value

Part D: This area is for calculating gross proceeds

Data elements shown in **BOLD** print should be entered by the user.

Theoretical: This worksheet is used to perform theoretical dual accounting for wellhead sales

Actual wellhead sales values are entered into parts A and major portion data is entered in Part B.

Theoretical values are entered into part C and Gross Proceeds data is entered in part D.

Processed Sales: This worksheet is used when the gas is sold processed or if information on the processed sales is available.

For gas that is sold **processed:**

Actual values are entered in Parts C and D. Values from a comparable wellhead contract are entered in Part A and Major portion data is entered in Part B.

For gas that is sold **at the wellhead and actual plant statements are available**

Enter the wellhead sales data in Part A and major portion data in Part B.

Enter the plant sales data in part C and Gross Proceeds data in Part D.

DUAL ACCOUNTING GAS SOLD AT WELLHEAD (NO PROCESSED INFORMATION)

LEASE 609-000XXX-0
 SALES MO/YR 01/1990
 WELL NAME-NUMBER Tribal 7-a
 WELL API 3003912345
 WELL NGPA CLASSIFICATION 10X

PART A UNPROCESSED GAS "BTU METHOD" VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHEAD PRICE (3) \$/MMBTU	GROSS VALUE	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.15	\$13,491.25	16.67%	\$2,248.99 <A>

PART B WELLHEAD MAJOR PORTION VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHD MAJOR PORTION PRICE \$/MMBTU	MAJOR PORTION VALUE (5)	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.552	\$16,013.80	16.67%	\$2,669.50

PART C PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)

PRODUCT (9)	WELLHEAD VOLUME MCF	GPM (6)	THEOR. PRODUCT GALLONS (7)	PLANT EFFICIENCY FACTOR	ACTUAL PRODUCT GALLONS (8)	MMBTU PER GALLON (9)	THEOR LIQUID MMBTU (10)	NGL PRICE \$/GAL (11)	NGL VALUE
ETHANE	5,000	2,255.34	11,276.70	85.0%	9,585.20	0.065889	631.56	\$0.2050	\$1,964.97
PROPANE	5,000	2,018.04	10,090.20	85.0%	8,576.67	0.090962	780.15	\$0.5100	\$4,374.10
N-BUTANE	5,000	1,034.66	5,173.30	99.5%	5,147.43	0.102918	529.76	\$0.3575	\$1,840.21
ISO-BUTANE	5,000	0,413.26	2,066.30	99.5%	2,055.97	0.098968	203.48	\$0.4900	\$1,007.43
NAT. GASOLINE (Pentane+)	5,000	1,010.53	5,052.65	99.5%	5,027.39	0.110071	553.37	\$0.4725	\$2,375.44
TOTAL			33,659.15		30,392.7		2,698.3		\$11,562.15

	Plant Tailgate MMBtu Price	\$2.80	Transportation Rate per Gallon(12)	\$0.00	Allowance Status (16)	Net NGL Value (13)	\$9,434.66
	Less Transportation(12)	\$0.45	Trans Reduced Value	\$11,562.15		Condensate Value	\$327.00
	Residue Gas MMBtu Price:	\$2.35	Processing Rate per Gallon(12)	\$0.07		Theor. Residue Gas value (14)	\$9,127.69
	Theoretical Residue Gas MMBtu (15)	3,576.68	Proc Reduced Value	\$9,434.66		Total Processed Gas Value	\$18,889.35
	Higher of Residue or Major Portion MMBtu Price	\$2.552				Royalty Rate	16.67%
						Processed Gas Royalty Value (4)	\$3,148.85 <C>

PART D GROSS PROCEEDS

GROSS PROCEEDS	ROYALTY RATE	GROSS PROCEEDS ROYALTY VALUE(4)
\$16,744.00	16.67%	\$2,791.22 <D>

Note: Sales by affiliates may provide information concerning gross proceeds to the lessee or the appropriate benchmark value and thus may be considered in determining royalty values.

Highest Royalty Value of <A>, , <C>, or <D> \$3,148.85 based on PROCESSED GAS "NET REALIZATION METHOD" VALUE
 Less Royalty Paid \$2,248.99

Additional Royalty DUE \$899.86

(1) All volumes and Btu factors are at 14.73 psia.

(2) Wellhead volume times Wellhead Btu factor.

(3) Gross Value divided by wellhead MMBtu.

(4) Royalty rate times Value.

(5) Wellhead volume (MMBTu) times major portion price.

(6) From gas analysis.

(7) Wellhead volume times gas stream analysis.

(8) Theoretical product gallons times plant efficiency factor.

(9) Physical Constants of Hydrocarbons (1996 Engineering data book) N-pentane factor was used for natural gasoline, which is 70% N-pentane

(10) Product Gallons time physical constant.

(11) From Average NGL Prices worksheet supplied with Order to Perform.

(12) After March 1, 1988, allowance can only be claimed if appropriate allowance forms have been filed with MMS.

(13) Actual product gallons times NGL price less transportation and processing allowances

(14) Theoretical Residue gas volume times the higher of residue gas value or major portion price.

(15) Wellhead MMBtu less Theoretical Liquid MMBtu.

(16) Tran. Allow. cannot exceed 50% of the value of the NGLs and Proc. Allow. cannot exceed 66.67% of the value of the NGLs.

**DUAL ACCOUNTING GAS SOLD PROCESSED
DUAL ACCOUNTING GAS SOLD AT WELLHEAD (PROCESSED INFORMATION AVAILABLE)**

LEASE 609-000XXX-0
SALES MO/YR 01/1990
WELL NAME-NUMBER Tribal 7-a
WELL API 3003912345
WELL NGPA CLASSIFICATION 10X

PART A UNPROCESSED GAS "BTU METHOD" VALUE (1)

WELLHEAD VOLUME (MCF)(2)	WELLHEAD BTU	WELLHEAD MMBTU (3)	WELLHEAD PRICE (4) \$/MMBTU	GROSS VALUE (5)	ROYALTY RATE	ROYALTY VALUE (6)
5,000	1,255	6,275	\$2.15	\$13,491.00	16.67%	\$2,248.95 <A>

PART B WELLHEAD MAJOR PORTION VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (3)	WELLHD MAJOR PORTION PRICE \$/MMBTU	MAJOR PORTION VALUE (7)	ROYALTY RATE	ROYALTY VALUE (8)
5,000	1,255	6,275	\$2.552	\$16,013.80	16.67%	\$2,669.50

PART C PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)

PRODUCT	ACTUAL PRODUCT GALLONS (8)	NGL PRICE \$/GAL (8)	NGL VALUE (10)	Allowance Status (13)
ETHANE	9,482.00	\$0.2050	\$1,943.81	Transportation Rate per Gallon(9) \$0.15 Allowable
PROPANE	9,600.00	\$0.5100	\$4,896.00	Trans Reduced Value \$7,382.36
N-BUTANE	5,300.00	\$0.3575	\$1,894.75	Processing Rate per Gallon(9) \$0.07 Allowable
ISO-BUTANE	2,001.00	\$0.4900	\$980.49	Proc Reduced Value \$5,182.89
NAT. GASOLINE	5,038.00	\$0.4725	\$2,380.46	
TOTAL	31,421.0		\$12,095.51	
Plant Tailgate MMBtu Price(8)	\$2.80			Net NGL Value (12) \$5,182.89
Less Transportation(9)	\$0.45			Condensate Value \$327.00
Residue Gas MMBtu Price:	\$2.35			Residue Gas value (11) \$9,125.95
Residue Gas MMBtu (8)	3,576.00			Total Processed Gas Value \$14,635.84
Higher of Residue or Major Portion MMBtu Price	\$2.552			Royalty Rate 16.67%
				Processed Gas Royalty Value (6) \$2,439.79 <C>

PART D GROSS PROCEEDS

GROSS PROCEEDS	ROYALTY RATE	GROSS PROCEEDS ROYALTY VALUE(6)
\$16,744.00	16.67%	\$2,791.22 <D>

Note: Sales by affiliates may provide information concerning gross proceeds to the lessee or the appropriate benchmark value and thus may be considered in determining royalty values.

Highest Royalty Value of <A>, , <C>, or <D> based on GROSS PROCEEDS
Less Royalty Paid \$2,248.95

Additional Royalty DUE \$542.27

(1) All volumes and Btu factors are at 14.73 psia.
(2) From 3160 measured at royalty settlement point.
(3) Wellhead volume times Wellhead Btu factor.
(4) Gross Value of comparable contract divided by wellhead MMBtu.
(5) Actual Gross Value or Gross Value from a comparable contract.
(6) Royalty rate times Value.
(7) Wellhead volume (MMBtu) times major portion price.

(8) From plant statement.
(9) After March 1, 1988, allowance can only be claimed if appropriate allowance forms have been filed with MMS.
(10) Actual product gallons times NGL price.
(11) Residue Gas volume times higher of residue gas price or major portion price.
(12) Actual product gallons times NGL price less transportation and processing allowance.
(13) Tran. Allow. cannot exceed 50% of the value of the NGLs and Proc. Allow. cannot exceed 66.67% of the value of the NGLs.

602-XXXX-ABC DUAL ACCOUNTING EXAMPLE WELL

Jan-90

WELLHEAD GROSS PROCEEDS	WELLH. MCF	WELLHEAD BTU	WELLHEAD MMBTU	CONDENSATE VALUE	WELL HEAD PRICE MMBTU	MAJOR PORTION PRICE MMBTU	MANUFACT. ALLOWANCE	FUEL & FLARE	GROSS RESIDUE MMBTU	FUEL & FLARE MMBTU	NET RESIDUE MMBTU	
1	2	3	4	5	6	7	8	9	10	11	12	13
		GPM @14.73	WELLHEAD MCF @14.73	THEORET. PRODUCT GALLONS (COL 3 X 4)	PLANT EFFICIENCY FACTOR	PRODUCT GALLONS	MMBTU PER GALLON	THEOR LIQUID MMBTU COL 7x 8	MNFCTRNG ALLWNCE GALLONS	FINAL PRODUCT GALLONS C7-C10	NGL PRICE \$/GAL	NGL VALUE C10 x C9
ETHANE	0	0.00000	0.00	0.00	80.0%	0.000	0.06587	0.0	0.00	0.00	\$0.0000	\$0.00
PROPANE	0	0.00000	0.00	0.00	80.0%	0.000	0.09093	0.0	0.00	0.00	\$0.0000	\$0.00
NOR-BUTANE	0	0.00000	0.00	0.00	99.5%	0.000	0.10291	0.0	0.00	0.00	\$0.0000	\$0.00
ISO-BUTANE	0	0.00000	0.00	0.00	99.5%	0.000	0.09892	0.0	0.00	0.00	\$0.0000	\$0.00
ISO-PENTANE	0	0.00000	0.00	0.00	99.5%	0.000	0.10881	0.0	0.00	0.00	\$0.0000	\$0.00
NOR-PENTANE	0	0.00000	0.00	0.00	99.5%	0.000	0.11009	0.0	0.00	0.00	\$0.0000	\$0.00
HEXANE	0	0.00000	0.00	0.00	99.5%	0.000	0.11502	0.0	0.00	0.00	\$0.0000	\$0.00
TOTAL								0.0				\$0.00

WELLHEAD GROSS PROCEEDS	WELLHEAD MP VALUE(1)	RESIDUE VALUE(2)	CONDENSATE VALUE	NGL VALUE	PROCESSED VALUE(3)	HIGHEST VALUE(4)
\$0.00	\$0.00	#DIV/0!	\$0.00	\$0.00	#DIV/0!	#DIV/0!

Highest Value: #DIV/0!
 Difference from Well Head Gross Proceeds (Add. Royalty Due): #DIV/0!

- (1) Wellhead MMBtu x Major Portion (MP) Price
- (2) Based on the greater of wellhead gross proceeds \$/MMBTu price or major portion \$/MMBTu price times net residue MMBtu
- (3) Residue Value + NGL Value + Condensate Value
- (4) The greater of Wellhead Gross Proceeds, Wellhead Major Portion, or Processed Value

Directions

Enter Well and Lease Information here

LEASE 609-000XXX-0
SALES MO/YR 01/1990
WELL NAME-NUMBER Tribal 7-a

DUAL ACCOUNTING

WELL API 3003912345
WELL NGPA CLASSIFICATION 10X

PART A UNPROCESSED GAS "BTU METHOD" VALUE (1)

As provided by gas stream analysis

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)
5,000	1,255	6,275

As Reported on Form MMS-2014

WELLHEAD PRICE (3) \$/MMBTU	GROSS VALUE
\$2.40	\$15,060.00

As per lease terms

ROYALTY RATE	ROYALTY VALUE (4)
16.67%	\$2,510.50

PART B WELLHEAD MAJOR PORTION VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)
5,000	1,255	6,275

As Provided by MMS

WELLHD MAJOR PORTION PRICE \$/MMBTU	MAJOR PORTION VALUE (5)
\$2.552	\$16,013.80

ROYALTY RATE	ROYALTY VALUE (4)
16.67%	\$2,669.50

PART C PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)

PRODUCT (9)
ETHANE
PROPANE
N-BUTANE
ISO-BUTANE
NAT. GASOLINE (Pentane+)
TOTAL

WELLHEAD VOLUME MCF	GPM (6)
5,000	2.25534
5,000	2.01804
5,000	1.03466
5,000	0.41326
5,000	1.01053

As provided by gas stream analysis at the wellhead

THEORET. PRODUCT GALLONS (7)
11,276.70
10,090.20
5,173.30
2,066.30
5,052.65
33,659.15

PLANT EFFICIENCY FACTOR
85.0%
85.0%
99.5%
99.5%

ACTUAL PRODUCT GALLONS (8)
9,585.20
8,576.67
5,147.43
2,055.97
5,027.39
30,392.7

MMBTU PER GALLON (9)
0.065727
0.090823
0.102909
0.098913
0.110080

Plant Tailgate MMBtu Price
 Less Transportation(12)

\$2.80
 \$0.45

As provided by plant operator

Directions

Residue Gas MMBtu Price: \$2.35
 Theoretical Residue Gas MMBtu (14) 3,579.53
 Higher of Residue or Major Portion MMBtu Price \$2.552

As Reported on Form MMS-2

PART D	GROSS PROCEEDS			
	GROSS PROCEEDS	ROYALTY RATE	GROSS PROCEEDS ROYALTY VALUE(4)	
	\$16,744.00	16.67%	<u>\$2,791.22</u>	<D>

Note: Sales by marketing affiliates appropriate benchmark value and

Highest Royalty Value of <A>, , <C>, or <D> \$3,150.06 based on PROCESSED GAS "NET REALIZ
 Less Royalty Paid → \$2,510.50
Additional Royalty DUE \$639.56 ←

This value is the additional royalty due on the well. If zero, no additional royalties are due

- (1) All volumes and Btu factors are at 14.73 psia
- (2) Wellhead volume times Wellhead Btu factor
- (3) Gross Value divided by wellhead MMBtu
- (4) Royalty rate times Value
- (5) Wellhead volume (MMBtu) times major portion price
- (6) From gas analysis
- (7) Wellhead volume times gas stream analysis

- (8) Theoretical product gallons times plant efficiency factor
- (9) Physical Constants of Hydrocarbons (1994 Engineering data book)
- (10) Product Gallons time physical constant
- (11) Actual product gallons times NGL price less transportation and pro
- (12) After March 1, 1988 allowance can only be claimed if appropriate a
- (13) Theoretical Residue gas volume times the higher of residue gas or
- (14) Wellhead MMBtu less Theoretical Liquid MMBtu

G EXAMPLE WELL

REV. 1.5

Lookup table for royalty due

\$2,510.50	UNPROCESSED GAS "BTU METHOD" VA
\$2,669.50	WELLHEAD MAJOR PORTION VALUE
\$3,150.06	PROCESSED GAS "NET REALIZATION MI
\$2,791.22	GROSS PROCEEDS

<A>

THEOR LIQUID MMBTU (10)	NGL PRICE \$/GAL	PROCSNG RATE PER GLN(12)	TRANS. RATE PER GLN(12)	NGL VALUE (11)
630.01	\$0.2050	0.07	0.00	\$1,294.00
778.96	\$0.5100	0.07	0.00	\$3,773.73
529.72	\$0.3575	0.07	0.00	\$1,479.89
203.36	\$0.4900	0.07	0.00	\$863.51
553.42	\$0.4725	0.07	0.00	\$2,023.52
2,695.5				
Total NGL Value				\$9,434.65
Condensate Value				\$327.00
Theor. Residue Gas value (13)				\$9,134.96

Enter NGL prices

Enter allowable rates

Directions

Form MMS-2014

Total Processed Gas Value	\$18,896.61
Royalty Rate	16.67%
Processed Gas Royalty Value (4)	<u>\$3,150.06</u> <C>

may provide information concerning gross proceeds to the lessee or the
thus may be considered in determining royalty values.

"METHOD" VALUE (1)

N-pentane factor was used for natural gasoline, which is 70% N-pentane.

processing allowance
allowance forms have been filed with MMS
or major portion price

Directions

VALUE (1)

METHOD VALUE (1)

DUAL ACCOUNTING GAS SOLD AT WELLHEAD (PROCESSED INFORMATION)

LEASE 609-000XXX-0
 SALES MO/YR 01/1990
 WELL NAME-NUMBER Tribal 7-a
 WELL API 3003912345
 WELL NGPA CLASSIFICATION 10X

REV. 1.5

PART A UNPROCESSED GAS "BTU METHOD" VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHEAD PRICE (3) \$/MMBTU	GROSS VALUE	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.40	\$15,060.00	16.67%	\$2,510.50 <A>

PART B WELLHEAD MAJOR PORTION VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHD MAJOR PORTION PRICE \$/MMBTU	MAJOR PORTION VALUE (5)	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.552	\$16,013.80	16.67%	\$2,669.50

PART C PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)

PRODUCT (9)	ACTUAL PRODUCT GALLONS (7)	NGL PRICE \$/GAL (7)	PROCSNG RATE PER GLN (12)	TRANS. RATE PER GLN (12)	NGL VALUE (11)
ETHANE	0.00	\$0.2050	0.07	0.00	\$0.00
PROPANE	0.00	\$0.5100	0.07	0.00	\$0.00
N-BUTANE	0.00	\$0.3575	0.07	0.00	\$0.00
ISO-BUTANE	0.00	\$0.4900	0.07	0.00	\$0.00
NAT. GASOLINE (Pentane+)	0.00	\$0.4725	0.07	0.00	\$0.00
TOTAL	0.0				

Plant Tailgate MMBtu Price	\$2.80	Total NGL Value	\$0.00
Less Transportation (12)	\$0.45	Condensate Value	\$327.00
Residue Gas MMBtu Price:	\$2.35	Actual Residue Gas value (7)	\$16,013.80
Actual Residue Gas MMBtu	6,275.00	Total Processed Gas Value	\$16,340.80
Higher of Residue or Major Portion MMBtu Price	\$2.552	Royalty Rate	16.67%
		Processed Gas Royalty Value (4)	\$2,724.01 <C>

PART D GROSS PROCEEDS

GROSS PROCEEDS	ROYALTY RATE	GROSS PROCEEDS ROYALTY VALUE (4)
\$16,744.00	16.67%	\$2,791.22 <D>

Note: Sales by marketing affiliates may provide information concerning gross proceeds to the lessee or the appropriate benchmark value and thus may be considered in determining royalty values.

Highest Royalty Value of <A>, , <C>, or <D> based on GROSS PROCEEDS
 Less Royalty Paid \$2,510.50

Additional Royalty DUE: \$280.72

(1) All volumes and Btu factors are at 14.73 psia
 (2) Wellhead volume times Wellhead Btu factor
 (3) Gross Value divided by wellhead MMBtu
 (4) Royalty rate times Value
 (5) Wellhead volume (MMBtu) times major portion price

(9) Physical Constants of Hydrocarbons (1994 Engineering data book) N-pentane factor was used for natural gasoline, which is 70% N-pentane.
 (11) Actual product gallons times NGL price less transportation and processing allowance
 (12) After March 1, 1988 allowance can only be claimed if appropriate allowance forms have been filed with MMS

(7) From plant statement

DUAL ACCOUNTING GAS SOLD PROCESSED

LEASE 609-000XXX-0
 SALES MO/YR 01/1990 WELL API 3003912345
 WELL NAME-NUMBER Tribal 7-a WELL NGPA CLASSIFICATION 10X

REV. 1.5

PART A UNPROCESSED GAS "BTU METHOD" VALUE (1)

WELLHEAD VOLUME (MCF)(1)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHEAD PRICE (3) \$/MMBTU	GROSS VALUE	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.40	\$15,060.00	16.67%	\$2,510.50 <A>

PART B WELLHEAD MAJOR PORTION VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHD MAJOR PORTION PRICE \$/MMBTU	MAJOR PORTION VALUE (5)	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.552	\$16,013.80	16.67%	\$2,669.50

PART C PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)

PRODUCT (9)	ACTUAL PRODUCT GALLONS (8)	NGL PRICE \$/GAL(8)	PROCSNG RATE PER GLN(12)	TRANS. RATE PER GLN(12)	NGL VALUE (8)
ETHANE	0.00	\$0.2050	0.07	0.00	\$0.00
PROPANE	0.00	\$0.5100	0.07	0.00	\$0.00
N-BUTANE	0.00	\$0.3575	0.07	0.00	\$0.00
ISO-BUTANE	0.00	\$0.4900	0.07	0.00	\$0.00
NAT. GASOLINE (Pentane+)	0.00	\$0.4725	0.07	0.00	\$0.00
TOTAL	0.0				

Plant Tailgate MMBtu Price	\$2.80
Less Transportation(12)	\$0.45
Residue Gas MMBtu Price:	\$2.35
Residue Gas MMBtu (8)	6,275.00
Higher of Residue or Major Portion MMBtu Price	\$2.552

Total NGL Value	\$0.00
Condensate Value	\$327.00
Residue Gas value (8)	\$16,013.80
Total Processed Gas Value	\$16,340.80
Royalty Rate	16.67%
Processed Gas Royalty Value (4)	\$2,724.01 <C>

PART D GROSS PROCEEDS

GROSS PROCEEDS	ROYALTY RATE	GROSS PROCEEDS ROYALTY VALUE(4)
\$16,744.00	16.67%	\$2,791.22 <D>

Note: Sales by marketing affiliates may provide information concerning gross proceeds to the lessee or the appropriate benchmark value and thus may be considered in determining royalty values.

Highest Royalty Value of <A>, , <C>, or <D> based on GROSS PROCEEDS
 Less Royalty Paid \$2,510.50

Additional Royalty DUE: \$280.72

(1) All volumes and Btu factors are at 14.73 psia
 (1.5) From 3160 measured at royalty settlement point.
 (2) Wellhead volume times Wellhead Btu factor
 (3) Gross Value of comparable contract divided by wellhead MMBtu
 (4) Royalty rate times Value
 (5) Wellhead volume (MMBtu) times major portion price

(8) From plant statement
 (11) Actual product gallons times NGL price less transportation and processing allowance
 (12) After March 1, 1988 allowance can only be claimed if appropriate allowance forms have been filed with MMS

DUAL ACCOUNTING GAS SOLD AT WELLHEAD (NO PROCESSED INFORMATION)

LEASE 609-000XXX-0
 SALES MO/YR 01/1990 WELL API 3003912345
 WELL NAME-NUMBER Tribal 7-a WELL NGPA CLASSIFICATION 10X REV. 1.5

PART A UNPROCESSED GAS "BTU METHOD" VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHEAD PRICE (3) \$/MMBTU	GROSS VALUE	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.40	\$15,060.00	16.67%	\$2,510.50 <A>

PART B WELLHEAD MAJOR PORTION VALUE (1)

WELLHEAD VOLUME (MCF)	WELLHEAD BTU	WELLHEAD MMBTU (2)	WELLHD MAJOR PORTION PRICE \$/MMBTU	MAJOR PORTION VALUE (5)	ROYALTY RATE	ROYALTY VALUE (4)
5,000	1,255	6,275	\$2.552	\$16,013.80	16.67%	\$2,669.50

PART C PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)

PRODUCT (9)	WELLHEAD VOLUME MCF	GPM (6)	THEORET. PRODUCT GALLONS (7)	PLANT EFFICIENCY FACTOR	ACTUAL PRODUCT GALLONS (8)	MMBTU PER GALLON (9)	THEOR LIQUID MMBTU (10)	NGL PRICE \$/GAL	PROCSSNG RATE PER GLN(12)	TRANS. RATE PER GLN(12)	NGL VALUE (11)
ETHANE	5,000	2.25534	11,276.70	85.0%	9,585.20	0.065727	630.01	\$0.2050	0.07	0.00	\$1,294.00
PROPANE	5,000	2.01804	10,090.20	85.0%	8,576.67	0.090823	778.96	\$0.5100	0.07	0.00	\$3,773.73
N-BUTANE	5,000	1.03466	5,173.30	99.5%	5,147.43	0.102909	529.72	\$0.3575	0.07	0.00	\$1,479.89
ISO-BUTANE	5,000	0.41326	2,066.30	99.5%	2,055.97	0.098913	203.36	\$0.4900	0.07	0.00	\$863.51
NAT. GASOLINE (Pentane+)	5,000	1.01053	5,052.65	99.5%	5,027.39	0.110080	553.42	\$0.4725	0.07	0.00	\$2,023.52
TOTAL			33,659.15		30,392.7		2,695.5				
								Total NGL Value			\$9,434.65
								Condensate Value			\$327.00
								Theor. Residue Gas value (13)			\$9,134.96
								Total Processed Gas Value			\$18,896.61
								Royalty Rate			16.67%
								Processed Gas Royalty Value (4)			\$3,150.06 <C>
			Plant Tailgate MMBtu Price			\$2.80					
			Less Transportation(12)			\$0.45					
			Residue Gas MMBtu Price:			\$2.35					
			Theoretical Residue Gas MMBtu (14)			3,579.53					
			Higher of Residue or Major Portion MMBtu Price			\$2.552					

PART D GROSS PROCEEDS

GROSS PROCEEDS	ROYALTY RATE	GROSS PROCEEDS ROYALTY VALUE(4)
\$16,744.00	16.67%	\$2,791.22 <D>

Note: Sales by marketing affiliates may provide information concerning gross proceeds to the lessee or the appropriate benchmark value and thus may be considered in determining royalty values.

Highest Royalty Value of <A>, , <C>, or <D> based on PROCESSED GAS "NET REALIZATION METHOD" VALUE (1)
 Less Royalty Paid \$2,510.50

Additional Royalty DUE \$639.56

(1) All volumes and Btu factors are at 14.73 psia
 (2) Wellhead volume times Wellhead Btu factor
 (3) Gross Value divided by wellhead MMBtu
 (4) Royalty rate times Value
 (5) Wellhead volume (MMBTu) times major portion price
 (6) From gas analysis
 (7) Wellhead volume times gas stream analysis
 (8) Theoretical product gallons times plant efficiency factor
 (9) Physical Constants of Hydrocarbons (1994 Engineering data book) N-pentane factor was used for natural gasoline, which is 70% N-pentane.
 (10) Product Gallons time physical constant
 (11) Actual product gallons times NGL price less transportation and processing allowance
 (12) After March 1, 1988 allowance can only be claimed if appropriate allowance forms have been filed with MMS
 (13) Theoretical Residue gas volume times the higher of residue gas or major portion price
 (14) Wellhead MMBtu less Theoretical Liquid MMBtu

ELPASO
PRICE

	102	
1989	5.447	
1990	5.775	
1991	6.243	
1992	6.748	
1993	7.295	
1994	7.886	
1995	8.525	

	103	
1989	3.481	
1990	3.587	
1991	3.734	
1992	3.887	
1993	4.047	
1994	4.212	
1995	4.385	

	104	
1989	2.881	
1990	2.969	
1991	3.091	
1992	3.217	
1993	3.349	
1994	3.487	
1995	3.63	

	104RML	
1989	0.689	1.227
1990	0.708	1.276
1991	0.733	1.327
1992	0.76	1.38
1993	0.787	1.435
1994	0.815	1.493
1995	0.845	1.553

	104RMS	
1989	0.689	1.227
1990	0.708	1.276
1991	0.733	1.327
1992	0.76	1.38
1993	0.787	1.435
1994	0.815	1.493
1995	0.845	1.553

	104RMS	
1989	0.817	1.227
1990	0.845	1.276
1991	0.884	1.327
1992	0.924	1.38

1993	0.966	1.435
1994	1.01	1.493
1995	1.057	1.553

104RECS

1989	1.369
1990	1.416
1991	1.48
1992	1.548
1993	1.618
1994	1.692
1995	1.769

104B(S)

1989	2.432
1990	2.506
1991	2.608
1992	2.715
1993	2.826
1994	2.942
1995	3.062

STRATA NET GAS PRODUCTION

ELPASO STRATA 6367098
 NORTHWEST STRATA 11722107
 TOTAL RESERVE volume 18089205

	EL PASO PRICES	NW PRICES	EL PASO VALUE	NORTHWEST VALUE	WEIGHTED AVERAGE PRICE
102					
1989	4.810692	4.117556	30630147.41	48266432	4.361528
1990	4.820557	4.229346	30692958.83	49576846	4.437442
1991	4.831519	4.343091	30762754.96	50910177	4.515009
1992	4.842578	4.461693	30833168.7	52300443	4.595758
1993	4.855230	4.581400	30913725.22	53703661	4.677784
1994	4.869237	4.707407	31002909.16	55180729	4.764368
1995	4.884622	4.840609	31100866.97	56742137	4.856101
103					
1989	3.141133	2.875440	19999901.64	33706215	2.968959
1990	3.096732	2.908288	19717196.12	34091263	2.974617
1991	3.042903	2.946946	19374461.61	34544416	2.980721
1992	2.997117	2.994851	19082937.66	35105964	2.995649
1993	2.959512	3.047764	18843502.94	35726216	3.016701
1994	2.928944	3.111062	18648873.48	36468202	3.046960
1995	2.906292	3.184674	18504645.98	37331089	3.086688
104 POST 74 ALL PROD.					
1989	2.631604				2.631604
1990	2.609838				2.609838
1991	2.584521				2.584521
1992	2.564940				2.564940
1993	2.552119				2.552119
1994	2.546061				2.546061
1995	2.545510				2.545510
104RM(L) LARGE PRODUCER ROCKY MT.					
1989	1.227000	1.730000	7812429.246	20279245	1.552952
1990	1.276000	1.820000	8124417.048	21334235	1.628521
1991	1.327000	1.910000	8449139.046	22389224	1.704794
1992	1.380000	2.010000	8786595.24	23561435	1.788251
1993	1.435000	2.110000	9136785.63	24733646	1.872411
1994	1.493000	2.220000	9506077.314	26023078	1.964108
1995	1.553000	2.340000	9888103.194	27429730	2.062989
104RM(S) SM PROD ROCKY MT.					
1989	1.227000				1.227000
1990	1.276000				1.276000
1991	1.327000				1.327000
1992	1.380000				1.380000
1993	1.435000				1.435000
1994	1.493000				1.493000
1995	1.553000				1.553000
104R(S) SM. PROD RECOMPLETION					
1989	1.347589	1.730000	8580231.227	20279245	1.595398
1990	1.386300	1.820000	8826707.957	21334235	1.667345
1991	1.436071	1.910000	9143604.792	22389224	1.743185
1992	1.488367	2.010000	9476578.549	23561435	1.826394
1993	1.541809	2.110000	9816849	24733646	1.910006
1994	1.598095	2.220000	10175227.48	26023078	2.001100
1995	1.656217	2.340000	10545295.95	27429730	2.099320

104B(2) SM. PROD. 73-74 BIENNIUM

1989	2.250305	2.250305
1990	2.245061	2.245061
1991	2.240200	2.240200
1992	2.241129	2.241129
1993	2.246867	2.246867
1994	2.258238	2.258238
1995	2.274087	2.274087

105 EXISTING INTRASTATE CONTRACTS

1989	1.227000	1.730000	7812429.246	20279245	1.552952
1990	1.276000	1.820000	8124417.048	21334235	1.628521
1991	1.327000	1.910000	8449139.046	22389224	1.704794
1992	1.380000	2.010000	8786595.24	23561435	1.788251
1993	1.435000	2.110000	9136785.63	24733646	1.872411
1994	1.493000	2.220000	9506077.314	26023078	1.964108
1995	1.553000	2.340000	9888103.194	27429730	2.062989

108 STRIPPER GAS

1989	5.137641	4.367579	32711863.74	51197228	4.638628
1990	5.142002	4.477959	32739630.65	52491115	4.711691
1991	5.145900	4.589797	32764449.6	53802092	4.785536
1992	5.150263	4.707015	32792229.25	55176133	4.863031
1993	5.155813	4.825144	32827566.64	56560854	4.941534
1994	5.163397	4.949728	32875854.71	58021241	5.024936
1995	5.172292	5.081500	32932490.05	59565887	5.113457

109 OTHER

1989	2.631604	2.471402	16755680.57	28970039	2.527790
1990	2.609838	2.518918	16617094.31	29527026	2.550920
1991	2.584521	2.571596	16455898.49	30144523	2.576145
1992	2.564940	2.632975	16331224.34	30864015	2.609028
1993	2.552119	2.699359	16249591.78	31642175	2.647533
1994	2.546061	2.774788	16211019.9	32526362	2.694280
1995	2.545510	2.861025	16207511.63	33537241	2.749969

FOOTNOTES FOR PAGE 1 OF THE JICARILLA MAJOR PORTION PRICING CALCULATION

B VALUE ESTIMATE OF RESERVES FROM THE JICARILLA STRATA SETTLEMENT FIGURES

C JICARILLA STRATA ESTIMATE VALUE OF THE RESERVES AT A 10% NET PRESENT VALUE DISCOUNT.

D STRATA ESTIMATE FOR EACH YEAR AT THE 10% NET PRESENT VALUE DISCOUNT.

TIMES THE PERCENTAGE OF SETTLEMENT 87.0714%

(EXAMPLE 1989. 1938255 X 0.870714 = 1687666)

STRATA VALUE AMOUNT	16,907,964
SETTLEMENT VALUE	14,722,000
PERCENTAGE DIFFERENCE:	0.870714

E NET PRESENT VALUE DISCOUNT

COLUMN C DIVIDED BY COLUMN B

ACTUAL AMOUNT RECEIVED DIVIDED BY THE STRATA 100% ESTIMATE.

F STRATA NGPA ESTIMATE PRICE FROM THE JICARILLA STRATA SUMMARY REPORT AND VALUE ESTIMATE

G SETTLED PRICE

STRATA NGPA ESTIMATE PRICE TIMES THE NET PRESENT VALUE DISCOUNT COLUMN E

H SETTLED PRICE AMOUNT PLUS THE ACTUAL MARKET OUT PRICE RECEIVED.

(EXAMPLE: 1989 102	SETTLED AMOUNT	MARKET OUT	PRICE RECEIVED
	3.583692 +	1.227 =	4.810692

JICARILLA MAJOR PORTION PRICES

EL PASO PRICE

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
VALUE	STRATA	ACTUAL	NET	STRATA	102 STRATA			103 STRATA			104 STRATA			108 STRATA			109 STRATA		
ESTIMATE	DISCOUNT	AMOUNT	PRESENT	ESTIMATE	SETTLED	SETTLED	ESTIMATE	SETTLED	SETTLED	ESTIMATE	SETTLED	SETTLED	ESTIMATE	SETTLED	SETTLEM	ESTIMATE	SETTLED	SETTLEM	
OF	@10%	SETTLED	VALUE	PRICE	PRICE	PLUS	PRICE	PRICE	PLUS	PRICE	PRICE	PLUS	PRICE	PRICE	PLUS	PRICE	PRICE	PLUS	
RESERVES	VALUE	VALUE	DISCOUNT	102	102	ACTUAL	103	103	ACTUAL	104	105	105	108	108	ACTUAL	109	109	ACTUAL	
1989	1987322	1938255	1687666	0.849216	4.220	3.583692	4.810692	2.254	1.914133	3.141133	1.227	1.227	4.605	3.910640	5.137640	1.654	1.405	2.632	
1990	3795791	3434574	2990532	0.787855	4.499	3.544560	4.820560	2.311	1.820733	3.096733	1.276	1.276	4.907	3.866004	5.142004	1.693	1.334	2.610	
1991	3747294	3068025	2671372	0.712880	4.916	3.504518	4.831518	2.407	1.715902	3.042902	1.327	1.327	5.357	3.818898	5.145898	1.764	1.258	2.585	
1992	3713983	2751386	2395670	0.645041	5.368	3.462580	4.842580	2.507	1.617118	2.997118	1.380	1.380	5.845	3.770265	5.150265	1.837	1.185	2.565	
1993	3689172	2472926	2153211	0.583657	5.860	3.420230	4.855230	2.612	1.524512	2.959512	1.435	1.435	6.375	3.720813	5.155813	1.914	1.117	2.552	
1994	3671816	2227069	1939140	0.528115	6.393	3.376239	4.869239	2.719	1.435945	2.928945	1.493	1.493	6.950	3.670399	5.163399	1.994	1.053	2.546	
1995	1850780	1015729	884409	0.477857	6.972	3.331619	4.884619	2.832	1.353291	2.906291	1.553	1.553	7.574	3.619289	5.172289	2.077	0.993	2.546	

22456158 16907964 14722000

STRATA VALUE AMOUNT 16,907,964
 SETTLEMENT VALUE 14,722,000
 PERCENTAGE DIFFERENCE 0.870714

NORTHWEST

VALUE	STRATA	ACTUAL	NET	STRATA	102 STRATA			103 STRATA			104 STRATA			108 STRATA			109 STRATA		
ESTIMATE	DISCOUNT	AMOUNT	PRESENT	ESTIMATE	SETTLED	SETTLED	ESTIMATE	SETTLED	SETTLED	ESTIMATE	SETTLED	SETTLED	ESTIMATE	SETTLED	SETTLEM	ESTIMATE	SETTLED	SETTLEM	
OF	@10%	SETTLED	VALUE	PRICE	PRICE	PLUS	PRICE	PRICE	PLUS	PRICE	PRICE	PLUS	PRICE	PRICE	PLUS	PRICE	PRICE	PLUS	
RESERVES	VALUE	VALUE	DISCOUNT	102	102	ACTUAL	103	103	ACTUAL	104	105	105	108	108	ACTUAL	109	109	ACTUAL	
1989	3163813	3024597	2109405	0.666729	3.581	2.387557	4.117557	1.718	1.14544	2.87544	1.73	1.73	3.956	2.63758	4.36758	1.112	0.741403	2.471403	
1990	3057140	2671072	1862851	0.609344	3.954	2.409346	4.229346	1.786	1.088288	2.908288	1.82	1.82	4.362	2.657959	4.477959	1.147	0.698918	2.518918	
1991	2983228	2382156	1661356	0.556899	4.369	2.433092	4.343092	1.862	1.036946	2.946946	1.91	1.91	4.812	2.679798	4.589798	1.188	0.661596	2.571596	
1992	2912477	2125493	1482355	0.508967	4.817	2.451694	4.461694	1.935	0.984851	2.994851	2.01	2.01	5.299	2.697016	4.707016	1.224	0.622976	2.632976	
1993	2867524	1912572	1333860	0.465161	5.313	2.4714	4.5814	2.016	0.937765	3.047765	2.11	2.11	5.837	2.715145	4.825145	1.267	0.589359	2.699359	
1994	2826568	1722994	1201645	0.425125	5.851	2.487406	4.707406	2.096	0.891062	3.111062	2.22	2.22	6.421	2.729728	4.949728	1.305	0.554788	2.774788	
1995	2055235	1144983	798531	0.388535	6.436	2.500611	4.840611	2.174	0.844675	3.184675	2.34	2.34	7.056	2.741503	5.081503	1.341	0.521025	2.861025	

19865985 14983867 10450003
 14722000

STRATA VALUE AMOUNT 14,983,867
 SETTLEMENT VALUE 10,450,000
 PERCENTAGE DIFFERENCE 0.697417

DUAL ACCOUNTING EXAMPLE WITHOUT PLANT EFFICIENCY FACTOR

LEASE MONTH
 1 2 3 4 5 6 7 8 9 10

@14.73

WELLHEAD BTU
 WELLHEAD MCF
 WELLHEAD VALUE
 WELLHEAD MMBTU

0.00

	GPM @14.65	GPM @14.73 C2X1.0055	WELLHEAD MCF @14.73	THEORET. PRODUCT GALLONS (COL 3 X 4)	MMBTU PER GALLON	THEOR LIQUID MMBTU COL 5X6	PROCESS FACTOR (COL 5 X 1)	NGLP PRICE	NGLP VALUE COL 8X9
ETHANE		0.00000	0.00	0.00	0.065869	0	0.00	0.00	
PROPANE		0.00000	0.00	0.00	0.090930	0	0.00	0.00	
NOR-BUTANE		0.00000	0.00	0.00	0.102911	0	0.00	0.00	
ISO-BUTANE		0.00000	0.00	0.00	0.098917	0	0.00	0.00	
ISO-PENTANE		0.00000	0.00	0.00	0.108805	0	0.00	0.00	
NOR-PENTANE		0.00000	0.00	0.00	0.110091	0	0.00	0.00	
HEXANE		0.00000	0.00	0.00	0.115021	0	0.00	0.00	

WELLHEAD VALUE	WELLHEAD MMBTU	MMBTU RATE	RESIDUE MMBTU	RESIDUE VALUE	PROCESSED VALUE	HIGHEST VALUE	#DIV/0!
0	0.00	#DIV/0!	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

ROYALTIES PAID
 ADDITIONAL ROYALTY DUE

#DIV/0!

Discussion items for Jicarilla OTP

1. Condensate language - confusing on lines 56-61
2. Jicarilla letter calling for revnegotiation of prices after 1/1/93 ... need to be concerned?
3. If well declassified - recommend use last classificationsome wells were reclassified in '93 to 107 in order to get a tax credit.
4. Unclassified wells ... what 104 category to use??
5. Time period questions 84-86 was "standard" NGPA
87-6/88 NGPA holiday -how to weight EP/NW share
7/88-6/89 standard NGPA
7/89 adjusted prices
6. explaining how the prices were calculated --in the methodology report or the letter, can we release the \$25 million amount??
7. 30 - 60 - 90 days are those the appropriate time periods?
8. What price for condensate??
9. 104 categories

For pre-1989 when we use the NGPA prices (plus tax reimbursements), the Jicarilla RIK gas did not have all of the subcategories for NGPA 104. For example Jicarilla RIK gas had subcategories of NGPA 104 such as "Flowing gas-small producers", "Replacement contract gas-small producers", "Rocky Mountain large producers" etc.

My concern is that when the in value payors have another subcategory under NGPA 104 such as "Minimum Rate gas-30 cents per mcf" (the RIK gas did not have this type of subcategory under 104), we could either:

-require companies to pay on the weighted average of the all 104 prices (weighted average of all subcategories of 104.) However, this would require companies to pay more than what they received under NGPA

or

-list all prices for all the subcategories under 104 even though the RIK gas was not sold under that specific sub category.

The issue is should we make a company pay for pre89 on what the RIK gas received for a category like 104 and not take into consideration the subcategories of 104??.

The second issue is regarding post 1989 under the settlements:

NW did not have NGPA 104 "Recompletion gas", "Rocky Mountain gas" or "73-74 Biennium small prod". However, El Paso did have these subcategories under NGPA 104.

When we computed the weighted average prices by category, we originally separated by each category and subcategory. David Wong does not believe that for these situations under 104 that we should separate by the subcategory--he thinks that we should only use a weighted average of all subcat of NGPA 104.

Strata separated the allocation by the subcategories under NGPA 104.

what about unclassified wells??

February 17, 1998

**METHODOLOGY FOR MAJOR PORTION
AND DUAL ACCOUNTING ANALYSIS
JICARILLA APACHE TRIBAL LEASES**

Purpose

The purpose of this report is to provide a background and to discuss the results of major portion and dual accounting analyses recently undertaken by the Royalty Valuation Division (RVD), Royalty Management Program (RMP), Minerals Management Service (MMS), for natural gas produced from Jicarilla Apache Tribal leases.

Background

On December 6, 1996, representatives of the Jicarilla Apache Indian Tribe (Jicarilla Tribe) and MMS met to discuss the implementation of major portion pricing for the natural gas produced from the Jicarilla Reservation (Reservation). From the mid-1970's to the mid-1990's, the Jicarilla Tribe sold gas under royalty-in-kind (RIK) agreements. During the majority of this time the gas was purchased under long-term contracts. Before the expiration of the agreements, the Jicarilla Tribe entered into contract settlements, thus allowing the purchasing companies to pay market prices rather than the Natural Gas Policy Act (NGPA) ceiling prices.

On May 28, 1997, representatives of the Jicarilla Tribe and MMS met in Dallas, Texas, to discuss the implementation of the major portion and dual accounting analyses. MMS presented a proposal to the Jicarilla Tribe that recommended MMS would issue orders to perform major portion based on Jicarilla Tribal RIK prices for each NGPA category. The Jicarilla Tribe concurred with this approach. The Jicarilla Tribe also concurred that the orders should also include dual accounting.

On June 17 and October 8, 1997, representatives of the Jicarilla Tribe and MMS met to review the contract settlements, sources of data, pricing data, and the major portion/dual accounting order to perform. On January 12, representatives of the Jicarilla Tribe and MMS met to review the draft Methodology Report and the draft Order to Perform.

Regulatory Criteria

The oil and gas valuation regulations found at 30 CFR 206 (1987), have long required that the "estimated reasonable value" of production be used for the purposes of computing royalties. Due consideration is given to the highest price paid for a part or for a major portion of gas of like quality in the same field, to the price received by the lessee, to posted

prices, and to other relevant matters. Title 25 CFR 211 (1997) (Indian Tribal) and the terms of the Jicarilla Tribal leases also specify that the value may, at the discretion of the Secretary of the Interior, be calculated on the basis of the highest price paid or offered at the time of production for the major portion of gas and/or natural gasoline and/or all other hydrocarbon substances produced and sold from the field where the leased lands are located.

The amended valuation regulations at 30 CFR §§ 206.172(a)(3)(i) and 206.173(a)(3)(i) (1997) address the issue of major portion for Indian lands. Specifically, the regulations provide:

For any Indian leases which provide that the Secretary may consider the highest price paid or offered for a major portion of production (major portion) in determining value of production for royalty purposes, if data are available to compute a major portion MMS will, where practicable, compare the value determined in accordance with this section with the major portion. The value to be used in determining the value of production for royalty purposes shall be the higher of those two values.

For natural gas, these regulations specify that a major portion price is calculated for like-quality gas in the same field (or, if necessary, to obtain a reasonable sample from the same area). Like-quality gas is gas of similar physical, chemical, and legal characteristics. Legal characteristics are generally the applicable NGPA category or subcategory.

Dual accounting requirements are specified by Indian lease terms, regulations, and MMS instructions. Dual accounting is defined as a valuation method that compares the value of the gas prior to processing, as determined under 30 CFR § 206.172 (1997), to the value of that same gas after processing (the combined values of the residue gas and gas plant products), as determined under 30 CFR § 206.173 (1997). Where the specific provisions of a lease are inconsistent with these regulations, the lease agreement shall govern to the extent of that inconsistency.

Major Portion Methodology

Under the agreement reached between MMS and Jicarilla representatives, the major portion methodology will identify the prices paid under RIK contracts and RIK settlement agreements and calculate the major portion by NGPA category for all gas production in the Reservation utilizing RIK data for the time period January 1984 through June 1995. The following key issues were agreed to by RVD and the Jicarilla Tribe at the December 6, 1996, and June 17, 1997, meetings:

- RVD will consider the Reservation as the "area" for calculating the major portion pricing.

- The price received for the RIK portion of the gas represents the one-eighth and/or one-sixth royalty share. RVD will extrapolate the royalty share to the entire eight-eighths and/or six-sixths sales volume and assume the value for the royalty share is representative of the prices received for the other portion of the gas sold from the Reservation.
- RVD will analyze samples of Jicarilla settlement statements and certify that the Jicarilla Tribe received the proper NGPA prices.
- RVD will send orders to the non-RIK payors only.

The NGPA Category

The major portion analysis covers the period from January 1984 through June 1995. Beginning with January 1984, RVD identified gas values by NGPA category for periods prior to the contract settlements. In the post-settlement period, RVD identified the settlement price by NGPA category. In the orders that RVD will send to the non-RIK payors, we will provide major portion prices by NGPA category and request that the payor identify the NGPA category of their gas, the time periods, and the lease(s) for which the company was a payor between January 1984 and June 1995.

The January 1984 through December 1986 and July 1988 through December 1988 major portion prices are based on the published NGPA prices plus tax reimbursements received by the Jicarilla Tribe. These prices are shown in Attachment 1 by NGPA category for each month/year. The NGPA categories identified are as follows:

102 New natural gas	103 New onshore production
104 Post - 1974 gas	104 1973-1974 Biennium gas
104 Replacement gas	104 Flowing gas
104 Rocky Mountain gas	105 Existing intrastate gas
108 Stripper gas	109 Other gas

The January 1987 through June 1988 major portion prices are based on a weighted-average price received by the Jicarilla Tribe resulting from a negotiated temporary price reduction between the Jicarilla Tribe and the gas purchasers. Starting in January 1989, the major portion prices are based on the prices received under the Jicarilla Tribal RIK contract plus contract settlements. The prices are shown in Attachment 1 by NGPA category for each month/year.

Definition of Field or Area

The majority of the Reservation is within Rio Arriba County, New Mexico, with a small portion extending into Sandoval County, New Mexico. The Reservation lies along the eastern edge of the San Juan Basin. Gas production is from the Pictured Cliffs Formation, Mesaverde Group, Gallup, Tocito, and fractured Mancos Formations, and the Dakota and

Dakota-Morrison Formations. The Fruitland Formation produces methane primarily from coals (Fruitland Coal). The regulations at 30 CFR §§ 206.172(a)(3)(ii) and 206.173(a)(3)(ii)(1997) state that major portion will be calculated on "like-quality gas sold under arm's-length contracts from the same field (or, if necessary, to obtain a reasonable sample, from the same area)." However, the State of New Mexico utilizes pools, rather than, field definitions. A pool is a "common source of supply" and is generally based on a geologic horizon. The State of New Mexico Oil and Gas Commission defines 30 pools that overlay or are within the Reservation boundary. In several cases, several pools overlay one another and/or extend well outside the Reservation boundary. Consequently, we are unable to define distinct field boundaries for Jicarilla Tribal gas production. Therefore, for this study, the Reservation boundary will be defined as the area. During the June 17, 1997, meeting between MMS and the Jicarilla Tribe, the Jicarilla Tribal representative agreed to use the Reservation boundary as the major portion area.

Data Retrieval

During September 1996, AFS data as reported on the Report of Sales and Royalty Remittance (Form MMS-2014), was extracted from the AFS database, processed and downloaded to a Microsoft Access table on the RVD Local Area Network. The criteria for extracting these data were: (1) all AFS data reported under Fund Code 550 (the fund code for the Reservation); (2) the product codes 03 (residue gas) and 04 (unprocessed gas); and (3) the transaction codes 01 (royalty) and 11 (transportation allowance).

Data Processing

Once extracted from the AFS database, the information was processed by a program that removed adjustments to previously submitted information. This program first sorted the database by lease, product code, revenue source, selling arrangement, sales year, sales month, royalty quantity, and royalty value. The program then identified all negative (adjusted) royalty quantities and values and searched for a matching positive line. If a match was found, both the positive and negative lines were removed. Next, those negative lines without a matching positive (indicative of misreporting) were written to an error file and removed from further processing.

The next operation performed on the data was to determine prices paid by the in-value payors. We calculated \$/MMBtu prices by adjusting for the quality of the gas.

A problem encountered in the data was that some records did not have a reported gas quality or the reported Btu content was not within a reasonable range. Options included removing those records, using the quality last reported for the lease, or assuming a quality. After analyzing this problem, we decided that given our limited resources, the best option was to calculate a gas quality from the data available. We determined the 1996 average quality reported on the Monthly Report of Operations (Form MMS-3160) for all Jicarilla

leases and calculated the average Btu range reported on all Jicarilla leases. For all product code 04 (unprocessed gas) lines submitted that did not report a quality or reported a quality outside of the average Btu range, we used the calculated average Btu reported on the Form MMS-3160 for each lease. For all product code 03 (residue gas) lines submitted that did not report a quality or reported a quality outside of the reasonable range, we calculated an average Btu reported on the Form MMS-2014 for the time period.¹

AFS Analysis of Major Portion Prices

RVD conducted an analysis to determine what percentage the extrapolated eight-eighths RIK sales volumes represented when compared to the total sales volumes reported by the in-value payors on the Form MMS-2014. RVD downloaded all Form MMS-2014 data from AFS for Fund Code 550 (Jicarilla Tribe). We then totaled the sales volumes by payor for February 1988. From the El Paso and Northwest settlement statements, RVD determined the RIK volumes purchased. We then calculated the eight-eighths RIK sales volume by dividing the one-eighth RIK volume by the royalty rates. To determine the total sales for the Reservation, RVD added the eight-eighths RIK sales volume to the Form MMS-2014 in-value sales volumes. We then divided the eight-eighths RIK sales volume by the total sales volume for the Reservation. From this analysis, RVD concluded that eight-eighths RIK sales volumes represent approximately 67 percent of the total sales volumes on the Reservation for the February 1988 sales month (Attachment 2).

The results of the above analyses further support that the data used to perform the major portion analysis were sufficient for that purpose and the values derived by RVD from the Jicarilla Tribal RIK data were reasonable.

Calculation of Major Portion Values

The major portion calculation has been divided into four time periods :

- Period 1: NGPA pricing was in effect for both El Paso and Northwest contracts (January 1984 through December 1986).
- Period 2: El Paso negotiated a temporary price reduction from the NGPA prices for the January 1987 through June 1987. Northwest negotiated a temporary price reduction from the NGPA prices for the July 1987 through June 1988 period.
- Period 3: NGPA pricing was in effect for both contracts.
- Period 4: Northwest negotiated a buy out of their contract and El Paso negotiated a buy

¹The Form MMS-3160 does not contain a Btu for the residue gas. Therefore, RVD used the Btu information obtained from the Form MMS-2014.

down of their contract.

The time periods and effective prices are shown in Table 1. Tax reimbursement information was obtained from the Jicarilla Tribal Tax manual and is shown in Table 2.

TABLE 1
Natural Gas Pricing Variations

Period	Time Period	El Paso Price	Northwest Price
1	January 1984 - December 1986	NGPA & Tax Reimbursement	NGPA & Tax Reimbursement
2	January 1987 - June 1987	\$2.50	NGPA & Tax Reimbursement
2	July 1987 - June 1988	NGPA & Tax Reimbursement	Contract Negotiated Price
3	July 1988 - December 1988	NGPA & Tax Reimbursement	NGPA & Tax Reimbursement
3	January 1989 - June 1989	NGPA & Tax Reimbursement; Contract Buy down 7/89	Contract Buy out - 2/89
4	July 1989 - December 1989	\$1.227 + buy down	Buy out
4	1990	\$1.276 + buy down	Buy out
4	1991	\$1.327 + buy down	Buy out
4	1992	\$1.380 + buy down	Buy out
4	1993	\$1.435 + buy down	Buy out
4	1994	\$1.493 + buy down	Buy out
4	1995	\$1.553 + buy down	Buy out

Major portion prices were calculated by using the prices received under the Jicarilla RIK contracts and are shown in Attachment 1. For periods 1 and 3, the major portion prices are the sum of the published NGPA prices and the tax reimbursements. The prices received by the Jicarilla Tribe in Period 2 (the market-out period) and Period 4 (the post-settlement period) are calculated as discussed below.

During the market-out period (Period 2- January 1987 through June 1988), RVD calculated a weighted-average price received for each NGPA category by multiplying the contract price times the Strata Evaluation Associates, Inc. (Strata),² reserve volume estimate and dividing the

² Strata Evaluation Associates, Inc., Parker, Colorado, performed an evaluation of the producing capacity of all wells that contributed to the Northwest or El Paso systems as of July

total El Paso and Northwest values by the total Strata volume estimate (Attachment 3).

TABLE 2
Jicarilla Tax Rates

Date	Severance Tax (Per MMBtu)	Privilege Tax (87.5% of Value)
1/1/84 through 5/30/85	\$0.05	
6/1/85 through 1/31/86	\$0.05	5.00%
2/1/86 through 1/31/87	\$0.05	5.18%
2/1/87 through 1/31/88	\$0.05	5.28%
2/1/88 through 12/31/88	\$0.05	5.47%

After the effective date of the Northwest and El Paso contract settlements, major portion prices were calculated by allocating the El Paso and Northwest settlement proceeds by NGPA category to the actual prices received under the El Paso settlement agreement to determine the total consideration received under the RIK contract for each NGPA category. Documents provided in support of the RIK contract settlements proceeds provided detailed information on the settlement monies received for each NGPA category. These amounts were used to calculate the major portion prices by category.

Strata calculated the amounts due to the Jicarilla Tribe for contract settlements with El Paso and Northwest based on volumetric decline curve analysis of the estimated reserves of the wells.

The contract settlements were based on the difference between the projected NGPA prices due under the original contract and the price negotiated under the buy out or buy down contract. Based on the projected NGPA prices and volumetric analysis, Strata calculated an annual present value estimate of the remaining reserves for both El Paso and Northwest (Column B) as shown on Attachment 4. This value was then discounted using a 10 percent discount rate (Column C). This settlement value was further reduced during negotiations between the Jicarilla Tribe and the companies (Column D). A settlement factor was calculated by dividing the total actual settlement amount by the Strata estimated settlement. For El Paso this was about 87 percent and for Northwest this was about 70 percent. This factor was then applied to the discounted amounts

1, 1989.

to determine a total annual settlement value (Column D). The annual settlement value was then divided by the annual present value estimate to generate a settlement discount factor (Column E). A price differential (Column H) was calculated between the projected NGPA price (Column G) and the buy down/buy out price (Column F). This differential represents the difference between the contract price not bought-out or not bought-down minus the buy down/buy out price. The undiscounted value was then discounted using the settlement discount factor discussed above to generate a settled price differential (Column I). This differential was then added to the buy-down/buy-out price to determine the major portion price (Column J) by category.

The above procedure was used to calculate all NGPA pricing categories, except those NGPA prices that were less than the buy-down/buy-out price, for which the major portion prices were equated to the actual buy-down/buy-out price (Columns K and L).

RVD then calculated a weighted-average price. This price was calculated by multiplying the appropriate El Paso and Northwest price received for each NGPA category by the Strata reserve volume for El Paso and Northwest and dividing both calculated values by the total volume for El Paso and Northwest (Attachment 4).

Dual Accounting Calculation

Dual accounting requirements are specified by Indian lease terms and regulations found at 25 CFR § 211.13(a) (1997) which state:

In determining the value for royalty purposes of products, such as natural gasoline, that are derived from treatment of gas, a reasonable allowance for the cost of manufacture shall be made, such allowance to be two-thirds of the value of the marketable product unless otherwise determined by the Secretary of the Interior on application of the lessee or on his own initiative, and that royalty will be computed on the value of gas or casinghead gas, or on the products thereof (such as residue gas, natural gasoline, propane, butane, etc.), whichever is the greater. [Emphasis added.]

Dual accounting is defined as a valuation method that requires the lessee to compute royalties based on the greater of: (1) the value of the gas prior to processing (as determined under 30 CFR § 206.172 (1997)), or (2) the combined value of the residue gas and gas plant products resulting from processing the gas (as determined under 30 CFR § 206.173 (1997)), plus the value of any condensate recovered downstream of the point of royalty settlement without resorting to processing (30 CFR § 206.52 (1997)). However, the value of production can never be less than the gross proceeds accruing to the lessee (30 CFR §§ 206.172(h) and 206.173(h) (1997)). After March 1, 1988, if royalties are paid pursuant to the processed gas valuation method, the requirements to submit appropriate allowance forms prior to claiming transportation and/or processing allowances must be met. (30 CFR §§ 206.176 through 206.179 (1997)).

RVD will review the responses to the September 29, 1995, Dear Payor letter and will issue orders to perform dual accounting and pay royalties on major portion prices.³ For those companies who stated that they performed dual accounting, RVD compared prices paid by the payors who paid in-value to the calculated major portion prices to determine whether orders should be issued. RVD will issue orders to those payors who paid in value (Attachment 5) and will require payments on the higher of the gross proceeds or the major portion price.

RVD reviewed contracts for the sales of natural gas liquids (NGL's). RVD obtained two comparable contracts⁴ with sales in the San Juan Basin. Under both of these contracts, the referenced price for NGL's was the Mt. Belvieu, Texas, spot prices. Thus, RVD determined that a comparable contract price for NGL's for the Reservation was the average Mt. Belvieu spot market price. The orders will require the calculations for NGL's to be based on the higher of the gross proceeds received for the NGL's or the average Mt. Belvieu spot market price (Attachment 6).

Global Settlements

The Jicarilla Tribe has entered global settlement agreements with Conoco Inc., Columbus Energy, and Jerome McHugh. RVD reviewed these settlements and determined that the settlements covered all the time periods when these companies were responsible for royalty payments on Jicarilla Tribal leases. Therefore, RVD will not issue orders for major portion and dual accounting to these companies.

³The orders will cite the requirement that royalty be based on the higher of the major portion value or gross proceeds accruing to the lessee as well as the requirement to perform dual accounting. Sales by affiliates may provide information concerning gross proceeds to the lessee and the appropriate benchmark value and thus may be considered in determining royalty values.

⁴These contracts include: Jerome P. McHugh (Buyer) and FT&T, Inc., (Seller) dated October 30, 1989, and Richardson Operating Company (Buyer) and Conoco Inc., (Seller) dated July 1993 (Attachment 7).

Conclusion

Our review of the major portion values calculated from the data reported to the Jicarilla Tribe on the RIK purchase statements shows that they are reasonable prices paid for a major portion of like-quality production sold from the Reservation. The use of these major portion values enforces the major portion price requirements found in the lease terms and upholds our trust responsibility to the Jicarilla Tribe.

RVD plans to send orders to 39 companies (Attachment 5) after the Jicarilla Tribe concurs with our major portion methodology.

List of Attachments

- 1. Major Portion Pricing**
- 2. 2/88 volume summary**
- 3. Weighted average pricing calculation**
- 4. Major portion pricing calculations**
- 5. List of payors**
- 6. Average NGL Prices**
- 7. Contracts**

February 17, 1998

**METHODOLOGY FOR MAJOR PORTION
AND DUAL ACCOUNTING ANALYSIS
JICARILLA APACHE TRIBAL LEASES**

Purpose

The purpose of this report is to provide a background and to discuss the results of major portion and dual accounting analyses recently undertaken by the Royalty Valuation Division (RVD), Royalty Management Program (RMP), Minerals Management Service (MMS), for natural gas produced from Jicarilla Apache Tribal leases.

Background

On December 6, 1996, representatives of the Jicarilla Apache Indian Tribe (Jicarilla Tribe) and MMS met to discuss the implementation of major portion pricing for the natural gas produced from the Jicarilla Reservation (Reservation). From the mid-1970's to the mid-1990's, the Jicarilla Tribe sold gas under royalty-in-kind (RIK) agreements. During the majority of this time the gas was purchased under long-term contracts. Before the expiration of the agreements, the Jicarilla Tribe entered into contract settlements, thus allowing the purchasing companies to pay market prices rather than the Natural Gas Policy Act (NGPA) ceiling prices.

On May 28, 1997, representatives of the Jicarilla Tribe and MMS met in Dallas, Texas, to discuss the implementation of the major portion and dual accounting analyses. MMS presented a proposal to the Jicarilla Tribe that recommended MMS would issue orders to perform major portion based on Jicarilla Tribal RIK prices for each NGPA category. The Jicarilla Tribe concurred with this approach. The Jicarilla Tribe also concurred that the orders should also include dual accounting.

On June 17 and October 8, 1997, representatives of the Jicarilla Tribe and MMS met to review the contract settlements, sources of data, pricing data, and the major portion/dual accounting order to perform. On January 12, representatives of the Jicarilla Tribe and MMS met to review the draft Methodology Report and the draft Order to Perform.

Regulatory Criteria

The oil and gas valuation regulations found at 30 CFR 206 (1987), have long required that the "estimated reasonable value" of production be used for the purposes of computing royalties. Due consideration is given to the highest price paid for a part or for a major portion of gas of like quality in the same field, to the price received by the lessee, to posted

prices, and to other relevant matters. Title 25 CFR 211 (1997) (Indian Tribal) and the terms of the Jicarilla Tribal leases also specify that the value may, at the discretion of the Secretary of the Interior, be calculated on the basis of the highest price paid or offered at the time of production for the major portion of gas and/or natural gasoline and/or all other hydrocarbon substances produced and sold from the field where the leased lands are located.

The amended valuation regulations at 30 CFR §§ 206.172(a)(3)(i) and 206.173(a)(3)(i) (1997) address the issue of major portion for Indian lands. Specifically, the regulations provide:

For any Indian leases which provide that the Secretary may consider the highest price paid or offered for a major portion of production (major portion) in determining value of production for royalty purposes, if data are available to compute a major portion MMS will, where practicable, compare the value determined in accordance with this section with the major portion.

The value to be used in determining the value of production for royalty purposes shall be the higher of those two values.

For natural gas, these regulations specify that a major portion price is calculated for like-quality gas in the same field (or, if necessary, to obtain a reasonable sample from the same area). Like-quality gas is gas of similar physical, chemical, and legal characteristics. Legal characteristics are generally the applicable NGPA category or subcategory.

Dual accounting requirements are specified by Indian lease terms, regulations, and MMS instructions. Dual accounting is defined as a valuation method that compares the value of the gas prior to processing, as determined under 30 CFR § 206.172 (1997), to the value of that same gas after processing (the combined values of the residue gas and gas plant products), as determined under 30 CFR § 206.173 (1997). Where the specific provisions of a lease are inconsistent with these regulations, the lease agreement shall govern to the extent of that inconsistency.

Major Portion Methodology

Under the agreement reached between MMS and Jicarilla representatives, the major portion methodology will identify the prices paid under RIK contracts and RIK settlement agreements and calculate the major portion by NGPA category for all gas production in the Reservation utilizing RIK data for the time period January 1984 through June 1995. The following key issues were agreed to by RVD and the Jicarilla Tribe at the December 6, 1996, and June 17, 1997, meetings:

- RVD will consider the Reservation as the "area" for calculating the major portion pricing.

- The price received for the RIK portion of the gas represents the one-eighth and/or one-sixth royalty share. RVD will extrapolate the royalty share to the entire eight-eighths and/or six-sixths sales volume and assume the value for the royalty share is representative of the prices received for the other portion of the gas sold from the Reservation.
- RVD will analyze samples of Jicarilla settlement statements and certify that the Jicarilla Tribe received the proper NGPA prices.
- RVD will send orders to the non-RIK payors only.

The NGPA Category

The major portion analysis covers the period from January 1984 through June 1995. Beginning with January 1984, RVD identified gas values by NGPA category for periods prior to the contract settlements. In the post-settlement period, RVD identified the settlement price by NGPA category. In the orders that RVD will send to the non-RIK payors, we will provide major portion prices by NGPA category and request that the payor identify the NGPA category of their gas, the time periods, and the lease(s) for which the company was a payor between January 1984 and June 1995.

The January 1984 through December 1986 and July 1988 through December 1988 major portion prices are based on the published NGPA prices plus tax reimbursements received by the Jicarilla Tribe. These prices are shown in Attachment 1 by NGPA category for each month/year. The NGPA categories identified are as follows:

102 New natural gas	103 New onshore production
104 Post - 1974 gas	104 1973-1974 Biennium gas
104 Replacement gas	104 Flowing gas
104 Rocky Mountain gas	105 Existing intrastate gas
108 Stripper gas	109 Other gas

The January 1987 through June 1988 major portion prices are based on a weighted-average price received by the Jicarilla Tribe resulting from a negotiated temporary price reduction between the Jicarilla Tribe and the gas purchasers. Starting in January 1989, the major portion prices are based on the prices received under the Jicarilla Tribal RIK contract plus contract settlements. The prices are shown in Attachment 1 by NGPA category for each month/year.

Definition of Field or Area

The majority of the Reservation is within Rio Arriba County, New Mexico, with a small portion extending into Sandoval County, New Mexico. The Reservation lies along the eastern edge of the San Juan Basin. Gas production is from the Pictured Cliffs Formation, Mesaverde Group, Gallup, Toco, and fractured Mancos Formations, and the Dakota and

Dakota-Morrison Formations. The Fruitland Formation produces methane primarily from coals (Fruitland Coal). The regulations at 30 CFR §§ 206.172(a)(3)(ii) and 206.173(a)(3)(ii)(1997) state that major portion will be calculated on "like-quality gas sold under arm's-length contracts from the same field (or, if necessary, to obtain a reasonable sample, from the same area)." However, the State of New Mexico utilizes pools, rather than, field definitions. A pool is a "common source of supply" and is generally based on a geologic horizon. The State of New Mexico Oil and Gas Commission defines 30 pools that overlay or are within the Reservation boundary. In several cases, several pools overlay one another and/or extend well outside the Reservation boundary. Consequently, we are unable to define distinct field boundaries for Jicarilla Tribal gas production. Therefore, for this study, the Reservation boundary will be defined as the area. During the June 17, 1997, meeting between MMS and the Jicarilla Tribe, the Jicarilla Tribal representative agreed to use the Reservation boundary as the major portion area.

Calculation of Major Portion Values

The major portion calculation has been divided into four time periods :

- Period 1: NGPA pricing was in effect for sales contracts (January 1984 through December 1986).
- Period 2: The purchasers negotiated a temporary price reductions from the NGPA prices for the January 1987 through June 1988 period.
- Period 3: NGPA pricing was in effect for the sales contracts.
- Period 4: The contracts were either bought-out or bought-down.

The time periods and effective prices are shown in Table 1. Tax reimbursement information was obtained from the Jicarilla Tribal Tax manual and is shown in Table 2.

**TABLE 1
Natural Gas Pricing Variations**

Period	Time Period	Price
1	January 1984 - December 1986	NGPA & Tax Reimbursement
2	January 1987 - June 1988	Contract Negotiated Price
3	July 1988 - December 1988	NGPA & Tax Reimbursement
4	January 1989 - June 1995	NGPA & Tax Reimbursement; Negotiated Prices

Major portion prices were calculated by using the prices received under the Jicarilla RIK

contracts and are shown in Attachment 1. For periods 1 and 3, the major portion prices are the sum of the published NGPA prices and the tax reimbursements. The prices received by the Jicarilla Tribe in Period 2 (the market-out period) and Period 4 (the post-settlement period) are calculated as discussed below.

During the market-out period (Period 2- January 1987 through June 1988), RVD calculated a weighted-average price received for each NGPA category by multiplying the contract price times the RIK reserve volume estimate and dividing the total contract values by the total volume estimate (Attachment 3).

TABLE 2
Jicarilla Tax Rates

Date	Severance Tax (Per MMBtu)	Privilege Tax (87.5% of Value)
1/1/84 through 5/30/85	\$0.05	
6/1/85 through 1/31/86	\$0.05	5.00%
2/1/86 through 1/31/87	\$0.05	5.18%
2/1/87 through 1/31/88	\$0.05	5.28%
2/1/88 through 12/31/88	\$0.05	5.47%

For Period 4, major portion prices were calculated by allocating the sales proceeds by NGPA category to the actual prices received under the modified contract to determine the total consideration received under the RIK contract for each NGPA category. Documents provided in support of the RIK contract settlements proceeds provided detailed information on the monies received for each NGPA category. These amounts were used to calculate the major portion prices by category.

Strata calculated the amounts due to the Jicarilla Tribe for contract settlements with El Paso and Northwest based on volumetric decline curve analysis of the estimated reserves of the wells.

The contract settlements were based on the difference between the projected NGPA prices due under the original contract and the price negotiated under the buy out or buy down contract. Based on the projected NGPA prices and volumetric analysis, Strata calculated an annual present value estimate of the remaining reserves for both El Paso and Northwest (Column B) as shown on Attachment 4. This value was then discounted using a 10 percent discount rate (Column C). This settlement value was further reduced during negotiations between the Jicarilla Tribe and the companies (Column D). A settlement factor was calculated by dividing the total actual settlement amount by the Strata estimated settlement. For El Paso this was about 87 percent and for Northwest this was about 70 percent. This factor was then applied to the discounted amounts to determine a total annual settlement value (Column D). The annual settlement value was then

divided by the annual present value estimate to generate a settlement discount factor (Column E). A price differential (Column H) was calculated between the projected NGPA price (Column G) and the buy down/buy out price (Column F). This differential represents the difference between the contract price not bought-out or not bought-down minus the buy down/buy out price. The undiscounted value was then discounted using the settlement discount factor discussed above to generate a settled price differential (Column I). This differential was then added to the buy-down/buy-out price to determine the major portion price (Column J) by category.

The above procedure was used to calculate all NGPA pricing categories, except those NGPA prices that were less than the buy-down/buy-out price, for which the major portion prices were equated to the actual buy-down/buy-out price (Columns K and L),

RVD then calculated a weighted-average price. This price was calculated by multiplying the appropriate El Paso and Northwest price received for each NGPA category by the Strata reserve volume for El Paso and Northwest and dividing both calculated values by the total volume for El Paso and Northwest (Attachment 4).

Dual Accounting Calculation

Dual accounting requirements are specified by Indian lease terms and regulations found at 25 CFR § 211.13(a) (1997) which state:

In determining the value for royalty purposes of products, such as natural gasoline, that are derived from treatment of gas, a reasonable allowance for the cost of manufacture shall be made, such allowance to be two-thirds of the value of the marketable product unless otherwise determined by the Secretary of the Interior on application of the lessee or on his own initiative, and that royalty will be computed on the value of gas or casinghead gas, or on the products thereof (such as residue gas, natural gasoline, propane, butane, etc.), whichever is the greater. [Emphasis added.]

Dual accounting is defined as a valuation method that requires the lessee to compute royalties based on the greater of: (1) the value of the gas prior to processing (as determined under 30 CFR § 206.172 (1997)), or (2) the combined value of the residue gas and gas plant products resulting from processing the gas (as determined under 30 CFR § 206.173 (1997)), plus the value of any condensate recovered downstream of the point of royalty settlement without resorting to processing (30 CFR § 206.52 (1997)). However, the value of production can never be less than the gross proceeds accruing to the lessee (30 CFR §§ 206.172(h) and 206.173(h) (1997)). After March 1, 1988, if royalties are paid pursuant to the processed gas valuation method, the requirements to submit appropriate allowance forms prior to claiming transportation and/or processing allowances must be met. (30 CFR §§ 206.176 through 206.179 (1997)).

RVD will review the responses to the September 29, 1995, Dear Payor letter and will issue

orders to perform dual accounting and pay royalties on major portion prices.¹ For those companies who stated that they performed dual accounting, RVD compared prices paid by the payors who paid in-value to the calculated major portion prices to determine whether orders should be issued. RVD will issue orders to those payors who paid in value (Attachment 5) and will require payments on the higher of the gross proceeds or the major portion price.

RVD reviewed contracts for the sales of natural gas liquids (NGL's). RVD obtained comparable contracts with sales in the San Juan Basin. Under these contracts, the referenced price for NGL's was the Mt. Belvieu, Texas, spot prices. Thus, RVD determined that a comparable contract price for NGL's for the Reservation was the average Mt. Belvieu spot market price. The orders will require the calculations for NGL's to be based on the higher of the gross proceeds received for the NGL's or the average Mt. Belvieu spot market price (Attachment 6).

Conclusion

Our review of the major portion values calculated from the data reported to the Jicarilla Tribe on the RIK purchase statements shows that they are reasonable prices paid for a major portion of like-quality production sold from the Reservation. The use of these major portion values enforces the major portion price requirements found in the lease terms and upholds our trust responsibility to the Jicarilla Tribe.

¹The orders will cite the requirement that royalty be based on the higher of the major portion value or gross proceeds accruing to the lessee as well as the requirement to perform dual accounting. Sales by affiliates may provide information concerning gross proceeds to the lessee and the appropriate benchmark value and thus may be considered in determining royalty values.

RVD plans to send orders to 39 companies (Attachment 5) after the Jicarilla Tribe concurs with our major portion methodology.

List of Attachments

- 1. Major Portion Pricing**
- 2. 2/88 volume summary**
- 3. Weighted average pricing calculation**
- 4. Major portion pricing calculations**
- 5. List of payors**
- 6. Average NGL Prices**
- 7. Contracts**

February 17, 1998

**METHODOLOGY FOR MAJOR PORTION
AND DUAL ACCOUNTING ANALYSIS
JICARILLA APACHE TRIBAL LEASES**

Purpose

The purpose of this report is to provide a background and to discuss the results of major portion and dual accounting analyses recently undertaken by the Royalty Valuation Division (RVD), Royalty Management Program (RMP), Minerals Management Service (MMS), for natural gas produced from Jicarilla Apache Tribal leases.

Background

On December 6, 1996, representatives of the Jicarilla Apache Indian Tribe (Jicarilla Tribe) and MMS met to discuss the implementation of major portion pricing for the natural gas produced from the Jicarilla Reservation (Reservation). From the mid-1970's to the mid-1990's, the Jicarilla Tribe sold gas under royalty-in-kind (RIK) agreements. During the majority of this time the gas was purchased under long-term contracts. Before the expiration of the agreements, the Jicarilla Tribe entered into contract settlements, thus allowing the purchasing companies to pay market prices rather than the Natural Gas Policy Act (NGPA) ceiling prices.

On May 28, 1997, representatives of the Jicarilla Tribe and MMS met in Dallas, Texas, to discuss the implementation of the major portion and dual accounting analyses. MMS presented a proposal to the Jicarilla Tribe that recommended MMS would issue orders to perform major portion based on Jicarilla Tribal RIK prices for each NGPA category. The Jicarilla Tribe concurred with this approach. The Jicarilla Tribe also concurred that the orders should also include dual accounting.

On June 17 and October 8, 1997, representatives of the Jicarilla Tribe and MMS met to review the contract settlements, sources of data, pricing data, and the major portion/dual accounting order to perform. On January 12, representatives of the Jicarilla Tribe and MMS met to review the draft Methodology Report and the draft Order to Perform.

Regulatory Criteria

The oil and gas valuation regulations found at 30 CFR 206 (1987), have long required that the "estimated reasonable value" of production be used for the purposes of computing royalties. Due consideration is given to the highest price paid for a part or for a major portion of gas of like quality in the same field, to the price received by the lessee, to posted

prices, and to other relevant matters. Title 25 CFR 211 (1997) (Indian Tribal) and the terms of the Jicarilla Tribal leases also specify that the value may, at the discretion of the Secretary of the Interior, be calculated on the basis of the highest price paid or offered at the time of production for the major portion of gas and/or natural gasoline and/or all other hydrocarbon substances produced and sold from the field where the leased lands are located.

The amended valuation regulations at 30 CFR §§ 206.172(a)(3)(i) and 206.173(a)(3)(i) (1997) address the issue of major portion for Indian lands. Specifically, the regulations provide:

For any Indian leases which provide that the Secretary may consider the highest price paid or offered for a major portion of production (major portion) in determining value of production for royalty purposes, if data are available to compute a major portion MMS will, where practicable, compare the value determined in accordance with this section with the major portion. The value to be used in determining the value of production for royalty purposes shall be the higher of those two values.

For natural gas, these regulations specify that a major portion price is calculated for like-quality gas in the same field (or, if necessary, to obtain a reasonable sample from the same area). Like-quality gas is gas of similar physical, chemical, and legal characteristics. Legal characteristics are generally the applicable NGPA category or subcategory.

Dual accounting requirements are specified by Indian lease terms, regulations, and MMS instructions. Dual accounting is defined as a valuation method that compares the value of the gas prior to processing, as determined under 30 CFR § 206.172 (1997), to the value of that same gas after processing (the combined values of the residue gas and gas plant products), as determined under 30 CFR § 206.173 (1997). Where the specific provisions of a lease are inconsistent with these regulations, the lease agreement shall govern to the extent of that inconsistency.

Major Portion Methodology

Under the agreement reached between MMS and Jicarilla representatives, the major portion methodology will identify the prices paid under RIK contracts and RIK settlement agreements and calculate the major portion by NGPA category for all gas production in the Reservation utilizing RIK data for the time period January 1984 through June 1995. The following key issues were agreed to by RVD and the Jicarilla Tribe at the December 6, 1996, and June 17, 1997, meetings:

- RVD will consider the Reservation as the "area" for calculating the major portion pricing.

- The price received for the RIK portion of the gas represents the one-eighth and/or one-sixth royalty share. RVD will extrapolate the royalty share to the entire eight-eighths and/or six-sixths sales volume and assume the value for the royalty share is representative of the prices received for the other portion of the gas sold from the Reservation.
- RVD will analyze samples of Jicarilla settlement statements and certify that the Jicarilla Tribe received the proper NGPA prices.
- RVD will send orders to the non-RIK payors only.

The NGPA Category

The major portion analysis covers the period from January 1984 through June 1995. Beginning with January 1984, RVD identified gas values by NGPA category for periods prior to the contract settlements. In the post-settlement period, RVD identified the settlement price by NGPA category. In the orders that RVD will send to the non-RIK payors, we will provide major portion prices by NGPA category and request that the payor identify the NGPA category of their gas, the time periods, and the lease(s) for which the company was a payor between January 1984 and June 1995.

The January 1984 through December 1986 and July 1988 through December 1988 major portion prices are based on the published NGPA prices plus tax reimbursements received by the Jicarilla Tribe. These prices are shown in Attachment 1 by NGPA category for each month/year. The NGPA categories identified are as follows:

102 New natural gas	103. New onshore production
104 Post - 1974 gas	104 1973-1974 Biennium gas
104 Replacement gas	104 Flowing gas
104 Rocky Mountain gas	105 Existing intrastate gas
108 Stripper gas	109 Other gas

The January 1987 through June 1988 major portion prices are based on a weighted-average price received by the Jicarilla Tribe resulting from a negotiated temporary price reduction between the Jicarilla Tribe and the gas purchasers. Starting in January 1989, the major portion prices are based on the prices received under the Jicarilla Tribal RIK contract plus contract settlements. The prices are shown in Attachment 1 by NGPA category for each month/year.

Definition of Field or Area

The majority of the Reservation is within Rio Arriba County, New Mexico, with a small portion extending into Sandoval County, New Mexico. The Reservation lies along the eastern edge of the San Juan Basin. Gas production is from the Pictured Cliffs Formation, Mesaverde Group, Gallup, Toco, and fractured Mancos Formations, and the Dakota and

Dakota-Morrison Formations. The Fruitland Formation produces methane primarily from coals (Fruitland Coal). The regulations at 30 CFR §§ 206.172(a)(3)(ii) and 206.173(a)(3)(ii)(1997) state that major portion will be calculated on "like-quality gas sold under arm's-length contracts from the same field (or, if necessary, to obtain a reasonable sample, from the same area)." However, the State of New Mexico utilizes pools, rather than, field definitions. A pool is a "common source of supply" and is generally based on a geologic horizon. The State of New Mexico Oil and Gas Commission defines 30 pools that overlay or are within the Reservation boundary. In several cases, several pools overlay one another and/or extend well outside the Reservation boundary. Consequently, we are unable to define distinct field boundaries for Jicarilla Tribal gas production. Therefore, for this study, the Reservation boundary will be defined as the area. During the June 17, 1997, meeting between MMS and the Jicarilla Tribe, the Jicarilla Tribal representative agreed to use the Reservation boundary as the major portion area.

Calculation of Major Portion Values

The major portion calculation has been divided into four time periods :

- Period 1: NGPA pricing was in effect for sales contracts (January 1984 through December 1986).
- Period 2: The purchasers negotiated a temporary price reductions from the NGPA prices for the January 1987 through June 1988 period.
- Period 3: NGPA pricing was in effect for the sales contracts.
- Period 4: The contracts were renegotiated.

The time periods and effective prices are shown in Table 1. Tax reimbursement information was obtained from the Jicarilla Tribal Tax manual and is shown in Table 2.

TABLE 1
Natural Gas Pricing Variations

Period	Time Period	Price
1	January 1984 - December 1986	NGPA & Tax Reimbursement
2	January 1987 - June 1988	Contract Negotiated Price
3	July 1988 - December 1988	NGPA & Tax Reimbursement
4	January 1989 - June 1995	NGPA & Tax Reimbursement; Negotiated Prices

Major portion prices were calculated by using the prices received under the Jicarilla RIK

contracts and are shown in Attachment 1. For periods 1 and 3, the major portion prices are the sum of the published NGPA prices and the tax reimbursements. The prices received by the Jicarilla Tribe in Period 2 (the market-out period) and Period 4 (the post-settlement period) are calculated as discussed below.

During the market-out period (Period 2- January 1987 through June 1988), RVD calculated a weighted-average price received for each NGPA category by multiplying the contract price times the RIK reserve volume estimate and dividing the total contract values by the total volume estimate (Attachment 3).

TABLE 2
Jicarilla Tax Rates

Date	Severance Tax (Per MMBtu)	Privilege Tax (87.5% of Value)
1/1/84 through 5/30/85	\$0.05	
6/1/85 through 1/31/86	\$0.05	5.00%
2/1/86 through 1/31/87	\$0.05	5.18%
2/1/87 through 1/31/88	\$0.05	5.28%
2/1/88 through 12/31/88	\$0.05	5.47%

For Period 4, major portion prices were calculated by allocating the sales proceeds by NGPA category to the actual prices received under the modified contract to determine the total consideration received under the RIK contract for each NGPA category. Documents provided in support of the RIK contract settlements proceeds provided detailed information on the monies received for each NGPA category. These amounts were used to calculate the major portion prices by category.

Strata calculated the amounts due to the Jicarilla Tribe for contract settlements with El Paso and Northwest based on volumetric decline curve analysis of the estimated reserves of the wells.

The contract settlements were based on the difference between the projected NGPA prices due under the original contract and the price negotiated under the buy out or buy down contract. Based on the projected NGPA prices and volumetric analysis, an annual present value estimate of the remaining reserves was calculated (Column B) as shown on Attachment 4. This value was then discounted using a 10 percent discount rate (Column C). This settlement value was further reduced during negotiations between the Jicarilla Tribe and the companies (Column D). A settlement factor was calculated by dividing the total actual settlement amount by the estimated settlement value. This factor was then applied to the discounted amounts to determine a total annual settlement value (Column D). The annual settlement value was then divided by the annual present value estimate to generate a settlement discount factor (Column E). A price

differential (Column H) was calculated between the projected NGPA price (Column G) and the buy down/buy out price (Column F). This differential represents the difference between the contract price not bought-out or not bought-down minus the buy down/buy out price. The undiscounted value was then discounted using the settlement discount factor discussed above to generate a settled price differential (Column I). This differential was then added to the buy-down/buy-out price to determine the major portion price (Column J) by category.

The above procedure was used to calculate all NGPA pricing categories, except those NGPA prices that were less than the buy-down/buy-out price, for which the major portion prices were equated to the actual buy-down/buy-out price (Columns K and L).

RVD then calculated a weighted-average price. This price was calculated by multiplying the appropriate El Paso and Northwest price received for each NGPA category by the Strata reserve volume for El Paso and Northwest and dividing both calculated values by the total volume for El Paso and Northwest (Attachment 4).

Dual Accounting Calculation

Dual accounting requirements are specified by Indian lease terms and regulations found at 25 CFR § 211.13(a) (1997), which state:

In determining the value for royalty purposes of products, such as natural gasoline, that are derived from treatment of gas, a reasonable allowance for the cost of manufacture shall be made, such allowance to be two-thirds of the value of the marketable product unless otherwise determined by the Secretary of the Interior on application of the lessee or on his own initiative, and that royalty will be computed on the value of gas or casinghead gas, or on the products thereof (such as residue gas, natural gasoline, propane, butane, etc.), whichever is the greater. [Emphasis added.]

Dual accounting is defined as a valuation method that requires the lessee to compute royalties based on the greater of: (1) the value of the gas prior to processing (as determined under 30 CFR § 206.172 (1997)), or (2) the combined value of the residue gas and gas plant products resulting from processing the gas (as determined under 30 CFR § 206.173 (1997)), plus the value of any condensate recovered downstream of the point of royalty settlement without resorting to processing (30 CFR § 206.52 (1997)). However, the value of production can never be less than the gross proceeds accruing to the lessee (30 CFR §§ 206.172(h) and 206.173(h) (1997)). After March 1, 1988, if royalties are paid pursuant to the processed gas valuation method, the requirements to submit appropriate allowance forms prior to claiming transportation and/or processing allowances must be met. (30 CFR §§ 206.176 through 206.179 (1997)).

RVD will review the responses to the September 29, 1995, Dear Payor letter and will issue

orders to perform dual accounting and pay royalties on major portion prices.¹ For those companies who stated that they performed dual accounting, RVD compared prices paid by the payors who paid in-value to the calculated major portion prices to determine whether orders should be issued. RVD will issue orders to those payors who paid in value (Attachment 5) and will require payments on the higher of the gross proceeds or the major portion price.

RVD reviewed contracts for the sales of natural gas liquids (NGL's). RVD obtained comparable contracts with sales in the San Juan Basin. Under these contracts, the referenced price for NGL's was the Mt. Belvieu, Texas, spot prices. Thus, RVD determined that a comparable contract price for NGL's for the Reservation was the average Mt. Belvieu spot market price. The orders will require the calculations for NGL's to be based on the higher of the gross proceeds received for the NGL's or the average Mt. Belvieu spot market price (Attachment 6).

Conclusion

Our review of the major portion values calculated from the data reported to the Jicarilla Tribe on the RIK purchase statements shows that they are reasonable prices paid for a major portion of like-quality production sold from the Reservation. The use of these major portion values enforces the major portion price requirements found in the lease terms and upholds our trust responsibility to the Jicarilla Tribe.

¹The orders will cite the requirement that royalty be based on the higher of the major portion value or gross proceeds accruing to the lessee as well as the requirement to perform dual accounting. Sales by affiliates may provide information concerning gross proceeds to the lessee and the appropriate benchmark value and thus may be considered in determining royalty values.

List of Attachments

- 1. Major Portion Pricing**
- 2. 2/88 volume summary**
- 3. Weighted average pricing calculation**
- 4. Major portion pricing calculations**
- 5. List of payors**
- 6. Average NGL Prices**
- 7. Contracts**

March 2, 1998

**METHODOLOGY FOR MAJOR PORTION
AND DUAL ACCOUNTING ANALYSIS
JICARILLA APACHE TRIBAL LEASES**

Purpose

The purpose of this report is to provide a background and to discuss the results of major portion and dual accounting analyses recently undertaken by the Royalty Valuation Division (RVD), Royalty Management Program (RMP), Minerals Management Service (MMS), for natural gas produced from Jicarilla Apache Tribal leases.

Background

On December 6, 1996, representatives of the Jicarilla Apache Indian Tribe (Jicarilla Tribe) and MMS met to discuss the implementation of major portion pricing for the natural gas produced from the Jicarilla Reservation (Reservation). From the mid-1970's to the mid-1990's, the Jicarilla Tribe sold gas under royalty-in-kind (RIK) agreements. During the majority of this time the gas was purchased under long-term contracts. Before the expiration of the agreements, the Jicarilla Tribe entered into contract renegotiations, thus allowing the purchasing companies to pay market prices rather than the Natural Gas Policy Act (NGPA) ceiling prices.

On May 28, 1997, representatives of the Jicarilla Tribe and MMS met in Dallas, Texas, to discuss the implementation of the major portion and dual accounting analyses. MMS presented a proposal to the Jicarilla Tribe that recommended MMS would issue orders to perform major portion based on Jicarilla Tribal RIK prices for each NGPA category. The Jicarilla Tribe concurred with this approach. The Jicarilla Tribe also concurred that the orders should also include dual accounting.

On June 17 and October 8, 1997, representatives of the Jicarilla Tribe and MMS met to review the contracts, sources of data, pricing data, and the major portion/dual accounting order to perform. On January 12, representatives of the Jicarilla Tribe and MMS met to review the draft Methodology Report and the draft Order to Perform.

Regulatory Criteria

The oil and gas valuation regulations found at 30 CFR 206 (1987), have long required that the "estimated reasonable value" of production be used for the purposes of computing royalties. Due consideration is given to the highest price paid for a part or for a major portion of gas of like quality in the same field, to the price received by the lessee, to posted

prices, and to other relevant matters. Title 25 CFR 211 (1997) (Indian Tribal) and the terms of the Jicarilla Tribal leases also specify that the value may, at the discretion of the Secretary of the Interior, be calculated on the basis of the highest price paid or offered at the time of production for the major portion of gas and/or natural gasoline and/or all other hydrocarbon substances produced and sold from the field where the leased lands are located.

The amended valuation regulations at 30 CFR §§ 206.172(a)(3)(i) and 206.173(a)(3)(i) (1997) address the issue of major portion for Indian lands. Specifically, the regulations provide:

For any Indian leases which provide that the Secretary may consider the highest price paid or offered for a major portion of production (major portion) in determining value of production for royalty purposes, if data are available to compute a major portion MMS will, where practicable, compare the value determined in accordance with this section with the major portion. The value to be used in determining the value of production for royalty purposes shall be the higher of those two values.

For natural gas, these regulations specify that a major portion price is calculated for like-quality gas in the same field (or, if necessary, to obtain a reasonable sample from the same area). Like-quality gas is gas of similar physical, chemical, and legal characteristics. Legal characteristics are generally the applicable NGPA category or subcategory.

Dual accounting requirements are specified by Indian lease terms, regulations, and MMS instructions. Dual accounting is defined as a valuation method that compares the value of the gas prior to processing, as determined under 30 CFR § 206.172 (1997), to the value of that same gas after processing (the combined values of the residue gas and gas plant products), as determined under 30 CFR § 206.173 (1997). Where the specific provisions of a lease are inconsistent with these regulations, the lease agreement shall govern to the extent of that inconsistency.

Major Portion Methodology

Under the agreement reached between MMS and Jicarilla representatives, the major portion methodology will identify the prices paid under RIK contracts and RIK renegotiated agreements and calculate the major portion by NGPA category for all gas production in the Reservation utilizing RIK data for the time period January 1984 through June 1995. The following key issues were agreed to by RVD and the Jicarilla Tribe at the December 6, 1996, and June 17, 1997, meetings:

- RVD will consider the Reservation as the "area" for calculating the major portion pricing.

- The price received for the RIK portion of the gas represents the one-eighth and/or one-sixth royalty share. RVD will extrapolate the royalty share to the entire eight-eighths and/or six-sixths sales volume and assume the value for the royalty share is representative of the prices received for the other portion of the gas sold from the Reservation.
- RVD will analyze samples of Jicarilla monthly settlement statements and certify that the Jicarilla Tribe received the proper NGPA prices.
- RVD will send orders to the non-RIK payors only.

The NGPA Category

The major portion analysis covers the period from January 1984 through June 1995. RVD identified gas values by NGPA category by month. In the orders that RVD will send to the non-RIK payors, we will provide major portion prices by NGPA category and request that the payor identify the NGPA category of their gas, the time periods, and the lease(s) for which the company was a payor between January 1984 and June 1995.

The January 1984 through December 1986 and July 1988 through December 1988 major portion prices are based on the published NGPA prices plus tax reimbursements received by the Jicarilla Tribe. These prices are shown in Attachment 1 by NGPA category for each month/year. The NGPA categories identified are as follows:

102 New natural gas	103 New onshore production
104 Post - 1974 gas	104 1973-1974 Biennium gas
104 Replacement gas	104 Flowing gas
104 Rocky Mountain gas	105 Existing intrastate gas
108 Stripper gas	109 Other gas

The January 1987 through June 1988 major portion prices are based on a weighted-average price received by the Jicarilla Tribe resulting from a negotiated temporary price reduction between the Jicarilla Tribe and the gas purchasers. Starting in January 1989, the major portion prices are based on the prices received under the Jicarilla Tribal RIK renegotiated contract and contract settlements. The prices are shown in Attachment 1 by NGPA category for each month/year.

Definition of Field or Area

The majority of the Reservation is within Rio Arriba County, New Mexico, with a small portion extending into Sandoval County, New Mexico. The Reservation lies along the eastern edge of the San Juan Basin. Gas production is from the Pictured Cliffs Formation, Mesaverde Group, Gallup, Tocito, and fractured Mancos Formations, and the Dakota and Dakota-Morrison Formations. The Fruitland Formation produces methane primarily from coals (Fruitland Coal). The regulations at 30 CFR §§ 206.172(a)(3)(ii) and

206.173(a)(3)(ii)(1997) state that major portion will be calculated on "like-quality gas sold under arm's-length contracts from the same field (or, if necessary, to obtain a reasonable sample, from the same area)." However, the State of New Mexico utilizes pools, rather than, field definitions. A pool is a "common source of supply" and is generally based on a geologic horizon. The State of New Mexico Oil and Gas Commission defines 30 pools that overlay or are within the Reservation boundary. In several cases, several pools overlay one another and/or extend well outside the Reservation boundary. Consequently, we are unable to define distinct field boundaries for Jicarilla Tribal gas production. Therefore, for this study, the Reservation boundary will be defined as the area. During the June 17, 1997, meeting between MMS and the Jicarilla Tribe, the Jicarilla Tribal representative agreed to use the Reservation boundary as the major portion area.

Calculation of Major Portion Values

The major portion calculation has been divided into four time periods :

- Period 1: NGPA pricing was in effect for the sales contracts (January 1984 through December 1986).
- Period 2: The purchasers negotiated a temporary price reductions from the NGPA prices for the January 1987 through June 1988 period.
- Period 3: NGPA pricing was in effect for the sales contracts.
- Period 4: The contracts were renegotiated. Due to different effective dates, NGPA pricing was also in effect for several months.

The time periods and effective prices are shown in Table 1. Tax reimbursement information was obtained from the Jicarilla Tribal Tax manual and is shown in Table 2.

TABLE 1
Natural Gas Pricing Variations

Period	Time Period	Price
1	January 1984 - December 1986	NGPA & Tax Reimbursement
2	January 1987 - June 1988	NGPA & Tax Reimbursement; Temporary Price Reduction
3	July 1988 - December 1988	NGPA & Tax Reimbursement
4	January 1989 - June 1995	NGPA & Tax Reimbursement; Re-negotiated Prices

Major portion prices were calculated by using the prices received under the Jicarilla RIK contracts and are shown in Attachment 1. For periods 1 and 3, the major portion prices are the sum of the published NGPA prices and the tax reimbursements. The prices received by the Jicarilla Tribe in Period 2 (the price reduction period) and Period 4 (the renegotiated price period) are calculated as discussed below.

During the temporary price reduction period (Period 2- January 1987 through June 1988), RVD calculated a weighted-average price received for each NGPA category by multiplying the contract price times the RIK reserve volume estimate and dividing the total contract values by the total volume estimate (Attachment 2). Table 1 of Attachment 2 shows an example of this calculation using simulated values. The actual reserve estimates and contract prices cannot be released in order to protect the confidential commercial and financial information of the Jicarilla Tribe. Table 2 of Attachment 2 shows the results of the actual calculations by NGPA category.

TABLE 2
Jicarilla Tax Rates

Date	Severance Tax (Per MMBtu)	Privilege Tax (87.5% of Value)
1/1/84 through 5/30/85	\$0.05	
6/1/85 through 1/31/86	\$0.05	5.00%
2/1/86 through 1/31/87	\$0.05	5.18%
2/1/87 through 1/31/88	\$0.05	5.28%
2/1/88 through 12/31/88	\$0.05	5.47%

For Period 4, major portion prices were calculated by allocating the sales proceeds by NGPA category to the actual prices received under the modified contracts to determine the total consideration received under the RIK contract for each NGPA category. Documents provided in support of the RIK contract settlements proceeds provided detailed information on the monies received for each NGPA category. These amounts were used to calculate the major portion prices by category. The amounts due to the Jicarilla Tribe for the renegotiated contracts were based on volumetric decline curve analysis of the estimated reserves of the wells.

The contract adjustments were based on the difference between the projected NGPA prices due under the original contract and the renegotiated prices. Tables 1 and 2 of Attachment 3 show examples of this calculation using simulated values. The actual reserve estimates and contract prices cannot be released in order to protect the confidential commercial and financial information of the Jicarilla Tribe. Based on the projected NGPA prices and volumetric analysis, an annual present value estimate of the remaining reserves was calculated (Column B) as shown on Attachment 3, Tables 1 and 2. This value was then discounted using a

10 percent discount rate (Column C). This settlement value was further reduced during negotiations between the Jicarilla Tribe and the companies. A settlement factor was calculated by dividing the total actual settlement amount by the estimated settlement value. This factor was then applied to the discounted amounts to determine a total annual settlement value (Column D). The annual settlement value was then divided by the annual present value estimate to generate a settlement discount factor (Column E). A price differential (Column H) was calculated between the projected NGPA price (Column G) and the renegotiated price (Column F). This differential represents the difference between the original contract price minus the renegotiated price. The undiscounted value was then discounted using the settlement discount factor discussed above to generate a settled price differential (Column I). This differential was then added to the renegotiated price to determine the major portion price (Column J) by category.

RVD then calculated a weighted-average price using the example calculations. This price was calculated by multiplying the appropriate renegotiated contract price received for each NGPA category by the appropriate reserve volume and dividing both calculated values by the total volume (Attachment 3, Table 3).

The major portion prices shown in Attachment 1 for 1989 through 1995 are calculated with this methodology and the actual reserve and contract prices

Dual Accounting Calculation

Dual accounting requirements are specified by Indian lease terms and regulations found at 25 CFR § 211.13(a) (1997) which state:

In determining the value for royalty purposes of products, such as natural gasoline, that are derived from treatment of gas, a reasonable allowance for the cost of manufacture shall be made, such allowance to be two-thirds of the value of the marketable product unless otherwise determined by the Secretary of the Interior on application of the lessee or on his own initiative, and that royalty will be computed on the value of gas or casinghead gas, or on the products thereof (such as residue gas, natural gasoline, propane, butane, etc.), whichever is the greater. [Emphasis added.]

Dual accounting is defined as a valuation method that requires the lessee to compute royalties based on the greater of: (1) the value of the gas prior to processing (as determined under 30 CFR § 206.172 (1997)), or (2) the combined value of the residue gas and gas plant products resulting from processing the gas (as determined under 30 CFR § 206.173 (1997)), plus the value of any condensate recovered downstream of the point of royalty settlement without resorting to processing (30 CFR § 206.52 (1997)). However, the value of production can never be less than the gross proceeds accruing to the lessee (30 CFR §§ 206.172(h) and 206.173(h) (1997)). After March 1, 1988, if royalties are paid pursuant to the processed gas valuation method, the requirements to submit appropriate allowance forms prior to claiming transportation and/or

processing allowances must be met. (30 CFR §§ 206.176 through 206.179 (1997)).

RVD will review the responses to the September 29, 1995, Dear Payor letter and will issue orders to perform dual accounting and pay royalties on major portion prices.¹ For those companies who stated that they performed dual accounting, RVD compared prices paid by the payors who paid in-value to the calculated major portion prices to determine whether orders should be issued. RVD will issue orders to those payors who paid in value (Attachment 4) and will require payments on the higher of the gross proceeds or the major portion price.

RVD reviewed contracts for the sales of natural gas liquids (NGL's). RVD obtained comparable contracts with sales in the San Juan Basin. Under these contracts, the referenced price for NGL's was the Mt. Belvieu, Texas, spot prices. Thus, RVD determined that a comparable contract price for NGL's for the Reservation was the average Mt. Belvieu spot market price. The orders will require the calculations for NGL's to be based on the higher of the gross proceeds received for the NGL's or the average Mt. Belvieu spot market price (Attachment 5).

Conclusion

Our review of the major portion values calculated from the data reported to the Jicarilla Tribe on the RIK purchase statements shows that they are reasonable prices paid for a major portion of like-quality production sold from the Reservation. The use of these major portion values enforces the major portion price requirements found in the lease terms and upholds our trust responsibility to the Jicarilla Tribe.

¹The orders will cite the requirement that royalty be based on the higher of the major portion value or gross proceeds accruing to the lessee as well as the requirement to perform dual accounting. Sales by affiliates may provide information concerning gross proceeds to the lessee and the appropriate benchmark value and thus may be considered in determining royalty values.

RVD plans to send orders to 39 companies (Attachment 4)

P:\RVDSHA~1\OANDG\CORNELL\JICARILL\MPDAMR1D.JAT

List of Attachments

- 1. Major Portion Pricing**
- 2. Weighted average pricing calculation**
- 3. Major portion pricing calculations**
- 4. List of payors**
- 5. Average NGL Prices**

March 2, 1998

**METHODOLOGY FOR MAJOR PORTION
AND DUAL ACCOUNTING ANALYSIS
JICARILLA APACHE TRIBAL LEASES**

Purpose

The purpose of this report is to provide a background and to discuss the results of major portion and dual accounting analyses recently undertaken by the Royalty Valuation Division (RVD), Royalty Management Program (RMP), Minerals Management Service (MMS), for natural gas produced from Jicarilla Apache Tribal leases.

Background

On December 6, 1996, representatives of the Jicarilla Apache Indian Tribe (Jicarilla Tribe) and MMS met to discuss the implementation of major portion pricing for the natural gas produced from the Jicarilla Reservation (Reservation). From the mid-1970's to the mid-1990's, the Jicarilla Tribe sold gas under royalty-in-kind (RIK) agreements. During the majority of this time the gas was purchased under long-term contracts. Before the expiration of the agreements, the Jicarilla Tribe entered into contract renegotiations, thus allowing the purchasing companies to pay market prices rather than the Natural Gas Policy Act (NGPA) ceiling prices.

On May 28, 1997, representatives of the Jicarilla Tribe and MMS met in Dallas, Texas, to discuss the implementation of the major portion and dual accounting analyses. MMS presented a proposal to the Jicarilla Tribe that recommended MMS would issue orders to perform major portion based on Jicarilla Tribal RIK prices for each NGPA category. The Jicarilla Tribe concurred with this approach. The Jicarilla Tribe also concurred that the orders should also include dual accounting.

On June 17 and October 8, 1997, representatives of the Jicarilla Tribe and MMS met to review the contracts, sources of data, pricing data, and the major portion/dual accounting order to perform. On January 12, 1998 representatives of the Jicarilla Tribe and MMS met to review the draft Methodology Report and the draft Order to Perform.

Regulatory Criteria

The oil and gas valuation regulations found at 30 CFR 206 (1987), have long required that the "estimated reasonable value" of production be used for the purposes of computing royalties. Due consideration is given to the highest price paid for a part or for a major portion of gas of like quality in the same field, to the price received by the lessee, to posted

prices, and to other relevant matters. Title 25 CFR 211 (1997) (Indian Tribal) and the terms of the Jicarilla Tribal leases also specify that the value may, at the discretion of the Secretary of the Interior, be calculated on the basis of the highest price paid or offered at the time of production for the major portion of gas and/or natural gasoline and/or all other hydrocarbon substances produced and sold from the field where the leased lands are located.

The amended valuation regulations at 30 CFR §§ 206.172(a)(3)(i) and 206.173(a)(3)(i) (1997) address the issue of major portion for Indian lands. Specifically, the regulations provide:

For any Indian leases which provide that the Secretary may consider the highest price paid or offered for a major portion of production (major portion) in determining value of production for royalty purposes, if data are available to compute a major portion MMS will, where practicable, compare the value determined in accordance with this section with the major portion. The value to be used in determining the value of production for royalty purposes shall be the higher of those two values.

For natural gas, these regulations specify that a major portion price is calculated for like-quality gas in the same field (or, if necessary, to obtain a reasonable sample from the same area). Like-quality gas is gas of similar physical, chemical, and legal characteristics. Legal characteristics are generally the applicable NGPA category or subcategory.

Dual accounting requirements are specified by Indian lease terms, regulations, and MMS instructions. Dual accounting is defined as a valuation method that compares the value of the gas prior to processing, as determined under 30 CFR § 206.172 (1997), to the value of that same gas after processing (the combined values of the residue gas and gas plant products), as determined under 30 CFR § 206.173 (1997). Where the specific provisions of a lease are inconsistent with these regulations, the lease agreement shall govern to the extent of that inconsistency.

Major Portion Methodology

Under the agreement reached between MMS and Jicarilla representatives, the major portion methodology will identify the prices paid under RIK contracts and RIK renegotiated agreements and calculate the major portion by NGPA category for all gas production in the Reservation utilizing RIK data for the time period January 1984 through June 1995. The following key issues were agreed to by RVD and the Jicarilla Tribe at the December 6, 1996, and June 17, 1997, meetings:

- RVD will consider the Reservation as the "area" for calculating the major portion pricing.

- The price received for the RIK portion of the gas represents the one-eighth and/or one-sixth royalty share. RVD will extrapolate the royalty share to the entire eight-eighths and/or six-sixths sales volume and assume the value for the royalty share is representative of the prices received for the other portion of the gas sold from the Reservation.
- RVD will analyze samples of Jicarilla Tribal monthly settlement statements and certify that the Jicarilla Tribe received the proper NGPA prices.
- RVD will send orders to the non-RIK payors only.

The NGPA Category

The major portion analysis covers the period from January 1984 through June 1995. RVD identified gas values by NGPA category by month. In the orders that RVD will send to the non-RIK payors, we will provide major portion prices by NGPA category and request that the payor identify the NGPA category of their gas, the time periods, and the lease(s) for which the company was a payor between January 1984 and June 1995.

The January 1984 through December 1986 and July 1988 through December 1988 major portion prices are based on the published NGPA prices plus tax reimbursements received by the Jicarilla Tribe. These prices are shown in Attachment 1 by NGPA category for each month/year. The NGPA categories identified are as follows:

- | | |
|------------------------|-----------------------------|
| 102 New natural gas | 103 New onshore production |
| 104 Post - 1974 gas | 104 1973-1974 Biennium gas |
| 104 Replacement gas | 104 Flowing gas |
| 104 Rocky Mountain gas | 105 Existing intrastate gas |
| 108 Stripper gas | 109 Other gas |

The January 1987 through June 1988 major portion prices are based on a weighted-average price received by the Jicarilla Tribe resulting from a negotiated temporary price reduction between the Jicarilla Tribe and the gas purchasers. Starting in January 1989, the major portion prices are based on the prices received under the Jicarilla Tribal RIK renegotiated contract and contract settlements. The prices are shown in Attachment 1 by NGPA category for each month/year.

Definition of Field or Area

The majority of the Reservation is within Rio Arriba County, New Mexico, with a small portion extending into Sandoval County, New Mexico. The Reservation lies along the eastern edge of the San Juan Basin. Gas production is from the Pictured Cliffs Formation,

Mesaverde Group, Gallup, Tocito, and fractured Mancos Formations, and the Dakota and Dakota-Morrison Formations. The Fruitland Formation produces methane primarily from coals (Fruitland Coal). The regulations at 30 CFR §§ 206.172(a)(3)(ii) and 206.173(a)(3)(ii)(1997) state that major portion will be calculated on "like-quality gas sold under arm's-length contracts from the same field (or, if necessary, to obtain a reasonable sample, from the same area)." However, the State of New Mexico utilizes pools rather than field definitions. A pool is a "common source of supply" and is generally based on a geologic horizon. The State of New Mexico Oil and Gas Commission defines 30 pools that overlay or are within the Reservation boundary. In several cases, several pools overlay one another and/or extend well outside the Reservation boundary. Consequently, we are unable to define distinct field boundaries for Jicarilla Tribal gas production. Therefore, for this study, the Reservation boundary will be defined as the area. During the June 17, 1997, meeting between MMS and the Jicarilla Tribe, the Jicarilla Tribal representative agreed to use the Reservation boundary as the major portion area.

Calculation of Major Portion Values

The major portion calculation has been divided into four time periods :

- Period 1: NGPA pricing was in effect for the sales contracts (January 1984 through December 1986).
- Period 2: The purchasers negotiated a temporary price reduction from the NGPA prices for the January 1987 through June 1988 period.
- Period 3: NGPA pricing was in effect for the sales contracts.
- Period 4: The contracts were renegotiated. Due to different effective dates, NGPA pricing was also in effect for several months.

The time periods and effective prices are shown in Table 1. Tax reimbursement information was obtained from the Jicarilla Tribal Tax manual and is shown in Table 2.

TABLE 1
Natural Gas Pricing Variations

Period	Time Period	Price
1	January 1984 - December 1986	NGPA & Tax Reimbursement
2	January 1987 - June 1988	NGPA & Tax Reimbursement; Temporary Price Reduction
3	July 1988 - December 1988	NGPA & Tax Reimbursement
4	January 1989 - June 1995	NGPA & Tax Reimbursement; Renegotiated Prices

Major portion prices were calculated by using the prices received under the Jicarilla RIK contracts and are shown in Attachment 1. For periods 1 and 3, the major portion prices are the sum of the published NGPA prices and the tax reimbursements. The prices received by the Jicarilla Tribe in Period 2 (the price reduction period) and Period 4 (the renegotiated price period) are calculated as discussed below.

During the temporary price reduction period (Period 2 - January 1987 through June 1988), RVD calculated a weighted-average price received for each NGPA category by multiplying the contract price times the RIK reserve volume estimate and dividing the total contract values by the total volume estimate (Attachment 2). Table 1 of Attachment 2 shows an example of this calculation using simulated values. The actual reserve estimates and contract prices cannot be released in order to protect the confidential commercial and financial information of the Jicarilla Tribe. Table 2 of Attachment 2 shows the results of the actual calculations by NGPA category.

TABLE 2
Jicarilla Tax Rates

Date	Severance Tax (Per MMBtu)	Privilege Tax (87.5% of Value)
1/1/84 through 5/30/85	\$0.05	
6/1/85 through 1/31/86	\$0.05	5.00%
2/1/86 through 1/31/87	\$0.05	5.18%
2/1/87 through 1/31/88	\$0.05	5.28%
2/1/88 through 12/31/88	\$0.05	5.47%

For Period 4, major portion prices were calculated by allocating the sales proceeds by NGPA category to the actual prices received under the modified contracts to determine the total consideration received under the RIK contract for each NGPA category. Documents provided in support of the RIK contract settlements proceeds provided detailed information on the monies received for each NGPA category. These amounts were used to calculate the major portion prices by category. The amounts due to the Jicarilla Tribe for the renegotiated contracts were based on volumetric decline curve analysis of the estimated reserves of the wells.

The contract adjustments were based on the difference between the projected NGPA prices due under the original contract and the renegotiated prices. Tables 1 and 2 of Attachment 3 show examples of this calculation using simulated values. The actual reserve estimates and contract prices cannot be released in order to protect the confidential commercial and financial information of the Jicarilla Tribe. Based on the projected NGPA prices and

volumetric analysis, an annual present value estimate of the remaining reserves was calculated (Column B) as shown on Attachment 3, Tables 1 and 2. This value was then discounted using a 10 percent discount rate (Column C). This settlement value was further reduced during negotiations between the Jicarilla Tribe and the companies. A settlement factor was calculated by dividing the total actual settlement amount by the estimated settlement value. This factor was then applied to the discounted amounts to determine a total annual settlement value (Column D). The annual settlement value was then divided by the annual present value estimate to generate a settlement discount factor (Column E). A price differential (Column H) was calculated between the projected NGPA price (Column G) and the renegotiated price (Column F). This differential represents the difference between the original contract price minus the renegotiated price. The undiscounted value was then discounted using the settlement discount factor discussed above to generate a settled price differential (Column I). This differential was then added to the renegotiated price to determine the major portion price (Column J) by category.

RVD then calculated a weighted-average price using the example calculations. This price was calculated by multiplying the appropriate renegotiated contract price received for each NGPA category by the appropriate reserve volume and dividing both calculated values by the total volume (Attachment 3, Table 3).

The major portion prices shown in Attachment 1 for 1989 through 1995 are calculated with this methodology and the actual reserve and contract prices

Dual Accounting Calculation

Dual accounting requirements are specified by Indian lease terms and regulations found at 25 CFR § 211.13(a) (1997) which state:

In determining the value for royalty purposes of products, such as natural gasoline, that are derived from treatment of gas, a reasonable allowance for the cost of manufacture shall be made, such allowance to be two-thirds of the value of the marketable product unless otherwise determined by the Secretary of the Interior on application of the lessee or on his own initiative, and that royalty will be computed on the value of gas or casinghead gas, or on the products thereof (such as residue gas, natural gasoline, propane, butane, etc.), whichever is the greater. [Emphasis added.]

Dual accounting is defined as a valuation method that requires the lessee to compute royalties based on the greater of: (1) the value of the gas prior to processing (as determined under 30 CFR § 206.172 (1997)), or (2) the combined value of the residue gas and gas plant products resulting from processing the gas (as determined under 30 CFR § 206.173 (1997)), plus the value of any condensate recovered downstream of the point of royalty settlement without resorting to processing (30 CFR § 206.52 (1997)). However, the value of production can never be less than the gross proceeds accruing to the lessee (30 CFR §§ 206.172(h) and 206.173(h) (1997)). After

March 1, 1988, if royalties are paid pursuant to the processed gas valuation method, the requirements to submit appropriate allowance forms prior to claiming transportation and/or processing allowances must be met. (30 CFR §§ 206.176 through 206.179 (1997)).

RVD will review the responses to the September 29, 1995, Dear Payor letter and will issue orders to perform dual accounting and pay royalties on major portion prices.¹ For those companies who stated that they performed dual accounting, RVD compared prices paid by the payors who paid in-value to the calculated major portion prices to determine whether orders should be issued. RVD will issue orders to those payors who paid in value (Attachment 4) and will require payments on the higher of the gross proceeds or the major portion price.

RVD reviewed contracts for the sales of natural gas liquids (NGL's). RVD obtained comparable contracts with sales in the San Juan Basin. Under these contracts, the referenced price for NGL's was the Mt. Belvieu, Texas, spot prices. Thus, RVD determined that a comparable contract price for NGL's for the Reservation was the average Mt. Belvieu spot market price. The orders will require the calculations for NGL's to be based on the higher of the gross proceeds received for the NGL's or the average Mt. Belvieu spot market price (Attachment 5).

Conclusion

Our review of the major portion values calculated from the data reported to the Jicarilla Tribe on the RIK purchase statements shows that they are reasonable prices paid for a major portion of like-quality production sold from the Reservation. The use of these major portion values enforces the major portion price requirements found in the lease terms and upholds our trust responsibility to the Jicarilla Tribe.

¹The orders will cite the requirement that royalty be based on the higher of the major portion value or gross proceeds accruing to the lessee as well as the requirement to perform dual accounting. Sales by affiliates may provide information concerning gross proceeds to the lessee and the appropriate benchmark value and thus may be considered in determining royalty values.

RVD plans to send orders to 39 companies (Attachment 4)

P:\RVDSHA~1\OANDG\CORNELL\JICARILL\MPDAMR1D.JAT

List of Attachments

- 1. Major Portion Pricing**
- 2. Weighted average pricing calculation**
- 3. Major portion pricing calculations**
- 4. List of payors**
- 5. Average NGL Prices**