DISTRICT

P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II

811 South First St., Artesia, NM 88210-2835

DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410-1693

State of New Mexico Energy, Minerals and Natural Resources Department

#### OIL CONSERVATION DIVISION

APPLICATION FOR DOWNHOLE COMMINGLING

2040 S. Pacheco Santa Fe, New Mexico 87505-6429 Form C-107-A New 3-12-96

APPROVAL PROCESS:

\_X\_ Administrative \_\_\_Hearing

EXISTING WELLBORE

\_ YES \_xNO

N JUAN 29-7 UNIT	50A O 21	29N-7W	Rio Arriba
Se		tr Sec - Twp - Rge	County
		•	ring Unit Lease Types: (check 1 or more)
GRID NO14538 Property C	code7465 API NO.30-0	)39-25643FederalX , S	itate(and/or) F88
The following facts are submitted n support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Blanco Mesaverde - 72319	n magning C	Basin Dakota - 71599
2. Top and Bottom of Pay Section (Perforations)	will be supplied upon completion	DEGETTE	will be supplied upon completion
3. Type of production (Oil or Gas)	gas	100 JUN - 3 1957 -	gas
4. Method of Production (Flowing or Artificial Lift)	flowing	OIL COM. DIN	flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift:	(Current) a. 777 psi (see attachment)	a. 93933	a. 965 psi (see attachment)
Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones:	(Original) b. 1251 psi (see attachment)	b.	b. 2648 psi (see attachment)
Estimated or Measured Original  6. Oil Gravity ( <sup>o</sup> API) or Gas BTU Content	BTU 1159		BTU 1008
7. Producing or Shut-In?	shut-in		shut-in
Production Marginal? (yes or no)	no		yes
* If Shut-In and oil/gas/water rates of last production	Date: n/a Rates:	Date: Rates:	Date: n/a Rates:
Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data			
* If Producing, give data and oil/gas/water water of recent test (within 60 days)	Date: n/a Rates:	Date: Rates:	Date: n/a Rates:
8. Fixed Percentage Allocation	Oil: Gas: %	Oil: Gas:	Oil: Gas:
Formula -% for each zone (total of %'s to equal 100%)	% % will be supplied upon completion	% %	% % will be supplied upon completion
If allocation formula is based attachments with supporting da     Are all working, overriding, and     If not, have all working, overriding and the sall offset operators been as a second or s	royalty interests identical in all ing, and royalty interests been n given written notice of the propo	commingled zones? otified by certified mail? sed downhole commingling?	Yesx_No Yesx_No _x_YesNo
	will the allocation formula be rel	lablex tesNo (ii n	io, attach explanation/
2. Are all produced fluids from all			
3. Will the value of production be o	decreased by commingling?	Yes _X_ No (If Yes, attach	explanation) Public Lands or the United State
4. If this well is on, or communitize of Land Management has been r	zeg with, state or federal lands notified in writing of this applicat	, either the Commissioner of t ionXYes No	rubiic Edilus di tile dilited didite
5. NMOCD Reference Cases for Ru	ule 303(D) Exceptions: ORDER	NO(S)R-10697	
6. ATTACHMENTS:  * C-102 for each zone  * Production curve for  * For zones with no production list of all  * Notification list of we  * Not additional stater	to be commingled showing its sy reach zone for at least one year. oduction history, estimated procestion method or formula. offset operators. orking, overriding, and royalty in ments, data or documents requi	pacing unit and acreage dedict (If not available, attach explain duction rates and supporting distribution interest defenses for uncommon interest ared to support commingling.	ation. nation.) ata. cases.

TYPE OR PRINT NAME \_ Sean C. Woolverton \_\_\_\_ TELEPHONE NO. (505) 326-9700

Distance 6 PO Hox 1980, Habbs, NM 88241-1980 District II

PO Drawer OD, Artena, NM 88211-0719

District III

1000 Rio Brazes Rd., Aziec. NM 87410

District iV

PO Box 2088. Santa Fe. NM 87504-2088

# State of New Mexico

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe, NM 87504-2088

Form . Reviseu February 21.

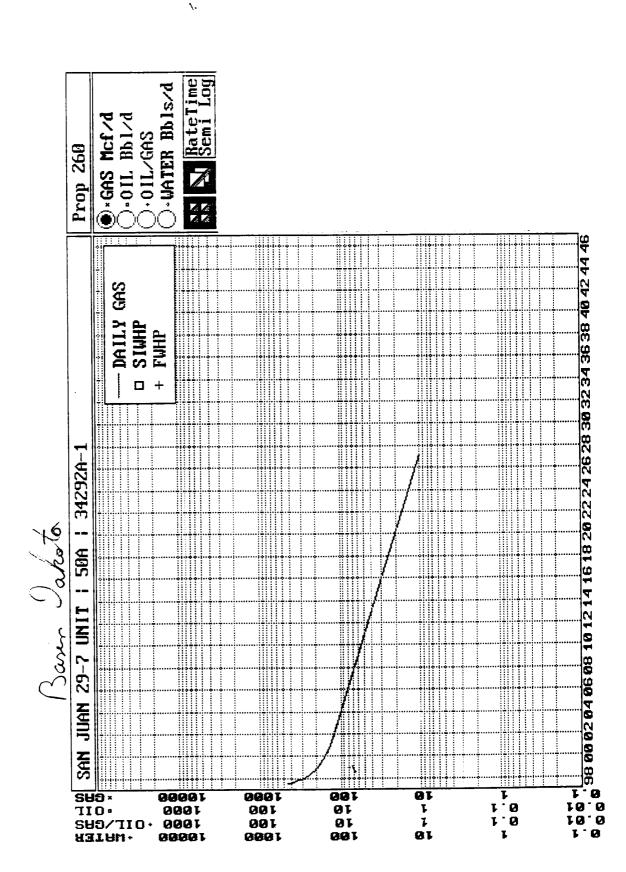
instructions or Submit to Appropriate District t

State Lease - - (

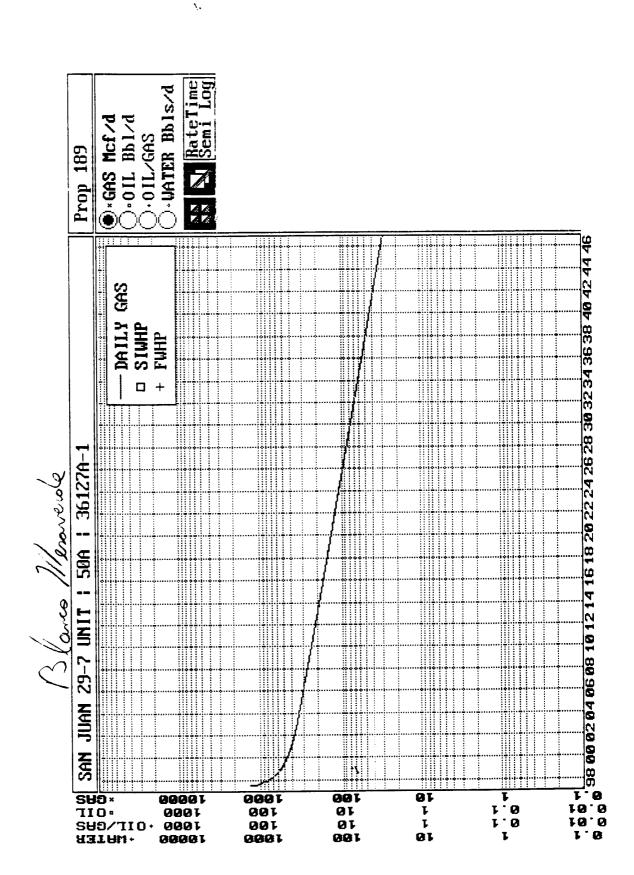
Fee Lease - 3 C

#### AMENDED RE WELL LOCATION AND ACREAGE DEDICATION PLAT 30-039- 25643 72319/71599 Blanco Mesaverde/Basin Dakota ' Property Code Well Number 7465 San Juan 29-7 Unit 50A 'OGRID No. 14538 BURLINGTON RESOURCES OIL & GAS COMPANY 67861 10 Surface Location UL or let me. Range Lot ide Feet from the North/South tipe Feet from the East West time Connty 0 21 29-N 7-W 790 South 1485 East R.A. 11 Bottom Hole Location If Different From Surface UL or tot se. Range Let Ide North/South time Feet from the Feet from the EAST WORK HAS Conney " Joint or Infill | " Consecudation Code | " Order No. MV-E/320 DK-F/320 NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATION. OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION 5278.68 16 **OPERATOR CERTIFICAT** 5F-07842# 8 recs to the best of my belief. 11/13/96 Date of Survey 1485

5278.68



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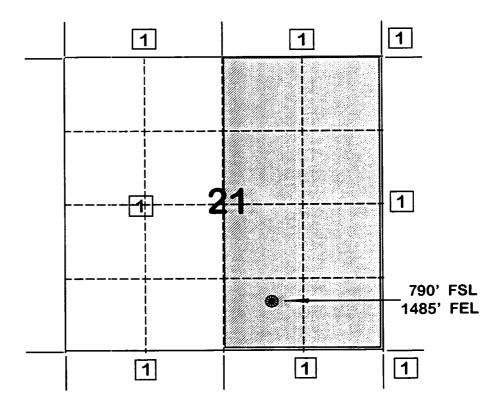


# BURLINGTON RESOURCES OIL AND GAS COMPANY

# San Juan 29-7 Unit #50A OFFSET OPERATOR \ OWNER PLAT

# Mesaverde/Dakota Formations Commingle Well

Township 29 North, Range 7 West



1) Burlington Resources Oil and Gas Company

OPR008M1 S001	0008 CHROMATO	GRAPH TEST MA	AIN SCREEN 20	0:01:12.2 05/20/9
FUNCTION (A,C,D,E) MP NUMBER EFFECTIVE DATE REGION CD MP TYPE CODE	42	SAN JUAN	TEST PRESSURE UNLI -7 UNIT 13	ESS NOTED **
SAMPLE LINE TEMPI TEST DATE TEST DEFSSIRE (D	ERATURE (DEG F) SIG) (DEG F) S) NUMBER	14 730	BTU/0 (AT 14.1 WET 1008.162 1 BTU WET _1008.162 1 VAPOR FACTO	/CF DRY 1026.000
03=DETAIL SCR 11=PREV SCR 21=REFRESH SCR B MY JOB	04=MP-NM BRWS 12=MAIN MENU 22=PREV MENU	06=MP/DS LS 24=HELP LU #3	T 07=MP/WN LST 20=NEXT REC PA1=TERMINAT	E
OPR008M2 S001			MPLE DETAIL 2 TA AT 14.730 PSIG	0:01:19.3 05/20/9 UNLESS NOTED **
HYDROGEN HELIUM NITROGEN	MOL % (AT 14		MP NUMBER EFFECTIVE DATE	95440
OXYGEN HYDROGEN SULFIDE CARBON DIOXIDE METHANE ETHANE PROPANE ISO-BUTANE	1.59 _95.44 _2.26 0.6 _0.30 0.6	5046	GASOLINE CONTE 26/70 GASOLINE 100% PROPANE EXCESS BUTANES TOTAL	
N-BUTANE ISO-PENTANE N-PENTANE HEXANE HEXANE PLUS HEPTANE PLUS		0072 0262 SU	SPECIFIC GR CALCULATED MEASURED LPHER GRAINS / 10	_0.5900
TOTALS  03=MAIN SCRE B MY JOB		7836  LU #3	24=HELP	PA1=TERMINATE

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	OPR008M1 S000 O					
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-	SAMPLE TYPE CODE (G. SAMPLE DATE SAMPLE LINE PRESSUR SAMPLE LINE TEMPERA TEST DATE TEST PRESSURE (PSIG TEST TEMPERATURE (D. TEST LIFE (MONTHS) TESTER SOURCE BA NU TEST PURPOSE CODE	AS,LIQ,BTU) E (PSIG) TURE (DEG F) ) EG F)	GAS 19961219 ———————————————————————————————————	(A WET 1158.  WET _1158 VAPOR	- BTU/CF .502 DRY _117 FACTOR	 79.000
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	HYDROGEN HELIUM	GPM OL % (AT 14		DATA AT 14.730 MP NUMBER EFFECTIVE	PSIG UNLESS 716 DATE 199701	
	OXYGEN HYDROGEN SULFIDE CARBON DIOXIDE METHANE ETHANE PROPANE	0.87 4.48 8.24 2.2	042 134	GASOLINE 26/70 GASC 100% PROE EXCESS BUTA TOTAL	OLINE	)
	ISO-PENTANE N-PENTANE HEXANE	<u> </u>		SPECIE CALCULATED MEASURED	FIC GRAVITY - _0.	6780
	HEPTANE PLUS	<del>-</del>	029	SULPHER GRAINS	3 / 100 CU FT	
	00 18777 000000	<b></b>		OA -IIDI D	DA1-TER	МТИДТЕ

NUM LU #2

03=MAIN SCREEN

B MY JOB

24=HELP PA1=TERMINATE

# San Juan 29-7 Unit #50A Bottom Hole Pressures Flowing and Static BHP Cullender and Smith Method

Version 1.0 3/13/94

Mesaverde	Dakota		
MV-Current	<u>DK-Current</u>		
GAS GRAVITY COND. OR MISC. (C/M)  %N2  0.37  %CO2  0.87  %H2S  0.00  DIAMETER (IN)  DEPTH (FT)  SURFACE TEMPERATURE (DEG F)  BOTTOMHOLE TEMPERATURE (DEG F)  SURFACE PRESSURE (PSIA)  BOTTOMHOLE PRESSURE (PSIA)  0.678  0.375  0.87  60  60  60  60  60  677	GAS GRAVITY COND. OR MISC. (C/M) %N2 %CO2 1.59 %H2S 0.00 DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) FLOWRATE (MCFPD) SURFACE PRESSURE (PSIA)  817  BOTTOMHOLE PRESSURE (PSIA) 964.8		
MV-Original	DK-Original		
GAS GRAVITY COND. OR MISC. (C/M)  %N2  %CO2  %H2S  DIAMETER (IN)  DEPTH (FT)  SURFACE TEMPERATURE (DEG F)  BOTTOMHOLE TEMPERATURE (DEG F)  SURFACE PRESSURE (PSIA)  BOTTOMHOLE PRESSURE (PSIA)  0.678  0.37  0.87  0.87  5378  5378  541  60  60  60  60  60  60  60  60  60  6	GAS GRAVITY COND. OR MISC. (C/M) %N2 0.14 %CO2 1.59 %H2S 0.00 DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) FLOWRATE (MCFPD) SURFACE PRESSURE (PSIA)  BOTTOMHOLE PRESSURE (PSIA)  2.59 60 60 80 80 80 80 80 80 80 80 80 80 80 80 80		

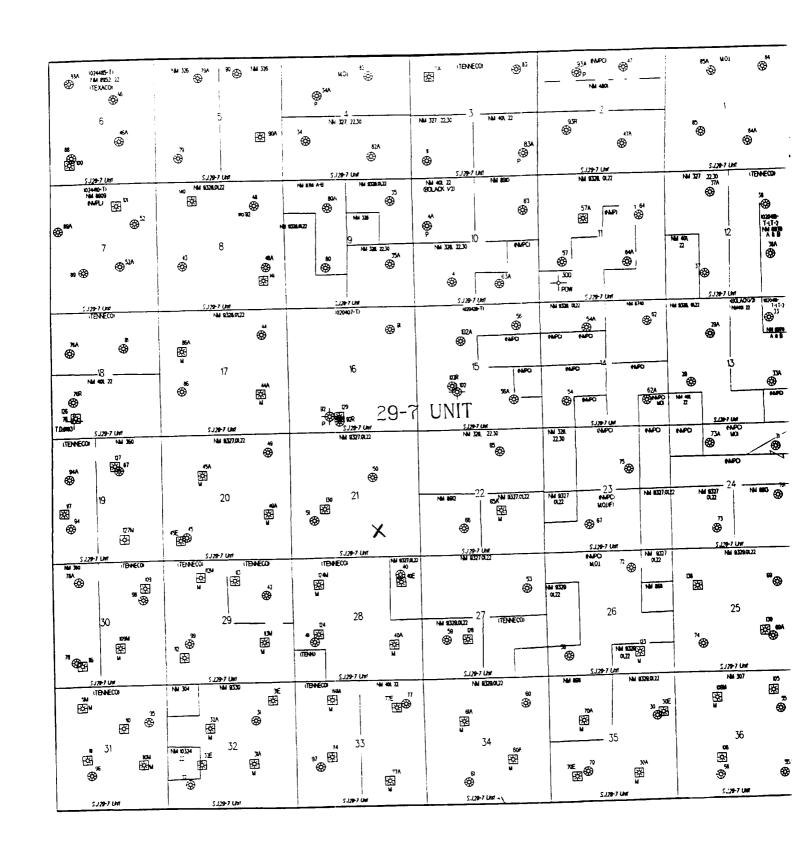
Page No.: 1
Print Time: Tue May 20 09:53:17 1997
Property ID: 2098
Property Name: SAN JUAN 29-7 UNIT | 130 | 1517-1
Table Name: K:\ARIES\RR98PDP\TEST.DBF

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10/03/86 10/11/87	58835 108144	1279.0	
09/04/88 08/07/90	140560 205466	832.0	
05/28/92	243176	817.0	€— Curen. ?

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Property ID: 4431
Property Name: SAN JUAN 29-7 UNIT | 50 | 69647-1
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DATE	CUM_GAS Mcf		-1.1
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04/14/89 04/15/91 07/15/91	5025309 5147423 5154159	665.0 665.0 677.0	e current



# STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 11629 ORDER NO. R-10697

APPLICATION OF BURLINGTON RESOURCES OIL & GAS COMPANY FOR THE ESTABLISHMENT OF A DOWNHOLE COMMINGLING "REFERENCE CASE" FOR ITS SAN JUAN 29-7 UNIT PURSUANT TO DIVISION RULE 303.E. AND THE ADOPTION OF SPECIAL ADMINISTRATIVE RULES THEREFOR, SAN JUAN COUNTY, NEW MEXICO.

## ORDER OF THE DIVISION

#### BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on October 17, and November 7, 1996, at Santa Fe, New Mexico, before Examiners David R. Catanach and Michael E. Stogner, respectively.

NOW, on this 8th day of November, 1996, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

### FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) The applicant, Burlington Resources Oil & Gas Company (Burlington), pursuant to the provisions of Division Rule 303.E., seeks to establish a downhole commingling "reference case" to provide exceptions for (a) marginal economic criteria, (b) pressure criteria, (c) allocation formulas and (d) modification of notification rules on a unit-wide basis for downhole commingling of Dakota, Mesaverde, Fruitland Coal and Pictured Cliffs gas production within existing or future drilled wells within the San Juan 29-7 Unit, San Juan County, New Mexico.
- (3) Division Rule No. 303.E., amended by Order No. R-10470-A, currently states:

"If sufficient data exists on a lease, pool, formation, geographic area, etc., so as to render it unnecessary to repeatedly provide such data on Form C-107-A, an operator may except any of the various criteria required under Paragraph 303.D. of this rule by establishing a "reference case". The Division, upon its own motion, or by application from an operator, may establish "reference cases" either administratively or by hearing. Upon Division approval of such "reference cases" for specific criteria, subsequent applications to downhole commingle (Form C-107-A) will be required only to cite the Division order number which established such exceptions and shall not be required to submit data for those criteria."

- (4) The applicant is the current operator of the San Juan 29-7 Unit which encompasses some 22,500 acres in Township 29 North, Range 7 West, NMPM, San Juan County, New Mexico.
- (5) Within the San Juan 29-7 Unit, the applicant currently operates fifty-five (55) Basin-Dakota Gas Pool wells, one hundred thirty-one (131) Blanco-Mesaverde Gas Pool wells, thirteen (13) Blanco-Pictured Cliffs and South Blanco-Pictured Cliffs Gas Pool wells, and forty-nine (49) Basin-Fruitland Coal Gas Pool wells.
  - (6) According to its evidence and testimony, Burlington seeks to:
    - establish a "reference case" for marginal economic criteria in the Dakota and Pictured Cliffs formations whereby these formations and/or pools may be identified as "marginal" on Form C-107-A's subsequently filed for wells within the San Juan 29-7 Unit. The applicant further proposes that the data provided in the immediate case serve as supplemental data or confirmation that these formations and/or pools should be classified as "marginal";
    - b) establish a "reference case" for pressure criteria in the Dakota and Pictured Cliffs formations whereby the Division may utilize data provided in the immediate case to verify the pressure data provided on Form C-107-A's subsequently filed for wells within the San Juan 29-7 Unit;
    - c) establish a "reference case" whereby the Division utilizes the data presented in the immediate case to endorse or approve certain methods of allocating production whereby the applicant need not submit additional data or justification when proposing a certain method of allocating production on Form C-107-A's subsequently filed for wells within the San Juan 29-7 Unit; and.

- d) establish a "reference case" or an administrative procedure for authorizing the downhole commingling of existing or future drilled wells within the San Juan 29-7 Unit without additional notice to each affected interest owner as required by Division Rule No. 303.D.
- (7) In support of its request to except marginal economic criteria, the applicant presented geologic and engineering evidence and testimony which indicates that within the San Juan 29-7 Unit:
  - a) the structure and thickness of the Dakota and Pictured Cliffs formations are very consistent;
  - b) the average recoverable Dakota and Pictured Cliffs gas reserves underlying an undeveloped drill block are approximately 245 MMCFG and 76 MMCFG, respectively;
  - c) the average initial producing rate for a newly drilled or recompleted Dakota and Pictured Cliffs gas well is approximately 218 MCFGD and 238 MCFGD, respectively; and,
  - d) the estimated ultimate gas recoveries and initial producing rates from the Dakota and Pictured Cliffs formations are insufficient to justify drilling stand alone wells and/or dually completed wells to recover such gas reserves.
  - (8) The evidence and testimony presented by the applicant indicates that the Dakota and Pictured Cliffs formations within the San Juan 29-7 Unit should be properly classified as "marginal".
  - (9) In support of its request to except pressure criteria within the Dakota and Pictured Cliffs formations within the San Juan 29-7 Unit, the applicant presented engineering evidence and testimony which indicates that:
    - a) the average shut-in bottomhole pressure within the Dakota and Pictured Cliffs formations at the time of initial development was approximately 3,209 psi and 1,148 psi, respectively; and,
    - b) the average current shut-in bottomhole pressure within the Dakota and Pictured Cliffs formations is approximately 952 psi and 655 psi, respectively.

- (10) There is sufficient pressure data available within the San Juan 29-7 Unit so as to except pressure criteria as proposed by the applicant.
- (11) The applicant testified that various allocation methods will be utilized for downhole commingled wells within the San Juan 29-7 Unit depending on the circumstances. Some of the methods and circumstances are described as follows:
  - a) the subtraction method will likely be utilized in those instances involving the Basin-Fruitland Coal Gas Pool and in those instances where a zone with a well established decline rate is commingled with a newly completed zone;
  - b) a fixed allocation formula will be utilized in those instances where production history for both zones is available, or in those instances where newly completed zones are tested and stabilized flow rates obtained.
- (12) The allocation methods proposed by the applicant are routinely utilized by industry and approved by the Division and therefore, the proposal to except allocation formulas should be approved.
- (13) In support of its request to establish a "reference case" or administrative procedure for providing notice within the San Juan 29-7 Unit the applicant presented evidence and testimony which indicates that:
  - a) the interest ownership between two zones within a given wellbore in the San Juan 29-7 Unit is generally not common;
  - b) pursuant to Division Rule No. 303.D., applicant is currently required to notify all interest owners within the San Juan 29-7 Unit every time a Form C-107-A is submitted to the Division. There are a considerable number of such interest owners within the unit;
  - c) providing notice to each interest owner within the San Juan 29-7
    Unit of subsequent downhole comminglings is unnecessary and is
    an excessive burden on the applicant;
  - d) the downhole commingling of wells within the San Juan 29-7 Unit Area will benefit working, royalty, and overriding royalty interest owners. In addition, the downhole commingling of wells within the San Juan 29-7 Unit should not violate the correlative rights of any interest owner;

- e) no interest owner appeared at the hearing in opposition to the establishment of a "reference case" or administrative procedure for notice.
- (14) An administrative procedure should be established within the San Juan 29-7 Unit for obtaining approval for subsequent downhole commingled wells without notice to Unit interest owners, provided however that, all other provisions contained within Division Rule No. 303.C. are complied with.
- (15) Approval of the proposed "reference cases" for marginal economic criteria, pressure criteria, allocation formulas and notice will lessen the burden on the applicant insofar as providing the data required pursuant to Division Rule No. 303.D. and Form C-107-A, will provide the applicant a streamlined method for obtaining downhole commingling approvals within the San Juan 29-7 Unit, and will not violate correlative rights.

# IT IS THEREFORE ORDERED THAT:

- (1) The application of Burlington Resources Oil & Gas Company to establish a "reference case" for (a) marginal economic criteria, (b) pressure criteria, (c) allocation formulas and (d) modification of notification rules on a unit-wide basis for downhole commingling of Dakota, Mesaverde, Fruitland Coal and Pictured Cliffs gas production within existing or future drilled wells within the San Juan 29-7 Unit, San Juan County, New Mexico, is hereby approved.
- (2) Upon filing of Division Form No. C-107-A's for wells subsequently downhole commingled within the San Juan 29-7 Unit Area, the applicant shall not be required to submit supporting data to justify the classification of the Pictured Cliffs and Dakota formations as "marginal", supporting data to verify the Pictured Cliffs and Dakota pressure information provided, and support or justification for utilizing a given method or formula for allocation of production, provided however, in the event any of the data described above appearing on Form C-107-A appears to be beyond the data range provided in this case, the Division may require the submittal of additional supporting data.
- (3) In order to obtain Division authorization to downhole commingle wells within the San Juan 29-7 Unit, the applicant shall file a Form C-107-A with the Santa Fe and Aztec Offices of the Division. Such application shall contain all the information required under Rule No. 303.C. of the Division Rules and Regulations, provided however that the applicant shall not be required to provide notice to all interest owners within the San Juan 29-7 Unit of such proposed commingling.

(4) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LeMAY

Directo

SEAL