BURLINGTON RESOURCES

SAN JUAN DIVISION

January 30, 1997

SENT FEDERAL EXPRESS

Mr. William LeMay New Mexico Oil Conservation Division 2040 South Pacheco Street Santa Fe, New Mexico 87505



OIL CON. DIV.

Re:

San Juan 29-7 Unit #129M

1850'FSL, 1190'FEL Section 16, T-29-N, R-7-W, Rio Arriba County, NM

API #30-039-25592

Dear Mr. LeMay:

This is a request for administrative approval for downhole commingling the Blanco Mesa Verde and Basin Dakota pools in the subject well. This well is a new Mesa Verde/Dakota well that is being drilled and completed in 1997.

To comply with the New Mexico Oil Conservation Division rules, Burlington Resources Oil & Gas Company is submitting the following for your approval of this commingling:

- Form C107A Application for Downhole Commingling;
- 2. C-102 plat for each zone showing its spacing unit and acreage dedication;
- Production curve not available new drill well;
- Notification list of offset operators Burlington is the offset operator;
- 5. Shut in wellhead pressure and calculated down hole pressure;
- Nine-section plats for the Mesa Verde and Dakota.

Notification of Mesa Verde and Dakota interest owners is covered under Reference Order #R-10697 issued November 8, 1996 attached.

We will consult with the Supervisor of the Aztec District Office of the New Mexico Oil Conservation Division to establish an allocation formula.

Please let me know if you require additional data.

Sincerely,

Peggy Bradfield

Regulatory/Compliance Administrator

encs.

DISTRICT I

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

7. Producing or Shut-In?

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

shut in

yes

EXISTING WELLBORE

___ YES __X NO

Operator Burlington Resources Oil & G	Addi Sas Company PO	ress Box 4289, Farmingt on, NM	87499
San Juan 29-7 Unit		Ltr Sec - Twp - Rge 3-29-7	County Rio Arriba Specing Unit Lease Types: (check 1 or more)
OGRID NO014538 Pro	perty Code7465 API No	O30-039-25592 Fed	deralX_ , State _x_, (and/or) Fee
The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower 200 200 200 200 200 200 200 200 200 20
Pool Name and Pool Code	72319 - Blanco Mesa Verde	DEVERMED	71599 - Basin Dakota
Top and Bottom of Pay Section (Perforations)	3778-5248 est.		7208-7488 est
Type of production (Oil or Gas)	gas		gas
Method of Production (Flowing or Artificial Lift)	flowing	OUL COM. DIV. DIST. 3	flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current	(Current) a.512 psi (see attachment)	a.	a. 784 psi (see attachment)
Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated or Measured Original	(Original) b. 1289 psi (see attachment)	b.	b. 3368 psi (see attachment)
6. Oil Gravity (^o API) or Gas BTU Content	BTU 1198		BTU 1000

shut in

District i PO Box 1910, Hobbs, NM 88241-1980 PO Drawer DD. Artesia, NM \$2211-0719 State of New Mexico
Energy, Mineral & Natural Resources Department

Form C-102 Revised February 21, 1994 instructions on back Submit to Appropriate District Office State Lease - 4 Copies

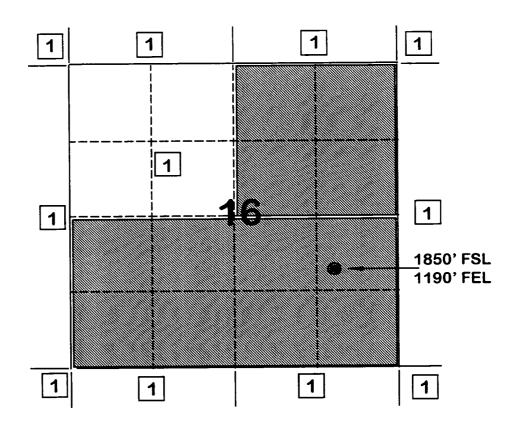
OIL CONSERVATION DIVISION PO Box 2088

intrict III 000 Rio Bruzos Re	i., Aziec. N	M 87410		San	PO Box ?	20 8 8 37504-2088			Fee Lease - 3 Copies
listrict IV O Box 2068, Sant	a Fe, NM I	7504-2088							MENDED REPORT
		WE	1110	CATION	I AND ACR	EAGE DEDIC	CATION PL	AT	
	PI Number		1	Pool Code			¹ Poet Na		
3 <u>0-03</u>			7231	3/7159		nco Hesaver	de/Basin	Dakota	* Well Number
· Property C					Property of Juan 29-7	Name - Unit			129M
7465		BURT	TNGTO				OMPANY		6266
14538					10 Surface				
		—	Bassa	Lot ide	Feet from the	North/South line	Feet from the	East/West to	1
UL er lot me.	Section 16	29 N	Range 7 W		1850	South	1190	East	R.A.
I	10	23	II Bol	trom Ho	e Location i	f Different Fr	om Surface		
UL or lot se.	Section	Townsaip	Range	Lot ida	Feet from the	North/South line	Feet from the	East/West i	County
11 Dedicated Ac	resi ¹³ Joint	or tafill 10	Canadidati	on Code 15	Order No.				
- / 2 2 /	` '					TALLES TO THE ALL	INTERESTS I	IAVE BEE	N CONSOLIDATED
NO ALLO	WABLE	WILL BE	ASSIGN	ED TO TE	HIS COMPLET	EEN APPROVE	BY THE DIV	/ISION	N CONSOLIDATED
		OR A	מ-אטא	ANDARL	ONIT TIME		17 OPE	RATOR	CERTIFICATIO
Not re from a by Dav	plat	dated	1-21-	d 86			True and con	mpiace so the be	ermanen contented heren is ist of my transledge and bel
							Printed No Regul Title	atory 9-25	Administrato
				10	NM-BIQ	037-58	J harmy o	erafy that the wal from field no my supervision. the best of my 9 – 9 6	rell location charm on this p les of cathol surveys made b and that the same is one a
						828/			3537

BURLINGTON RESOURCES OIL AND GAS COMPANY

San Juan 29-7 Unit #129M OFFSET OPERATOR \ OWNER PLAT

Mesaverde (E/2) /Dakota (S/2) Formations Commingle Well Township 29 North, Range 7 West



1) Burlington Resources Oil and Gas Company Successor to Meridian Oil Inc.

FLOWING AND STATIC BHP CULLENDER AND SMITH METHOD

VERSION 1.0 3/13/94

GAS GRAVITY	0.703
COND. OR MISC. (C/M)	С
%N2	0.24
%CO2	0.9
%H2S	0
DIAMETER (IN)	2.375
DEPTH (FT)	5749
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	150
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	443
BOTTOMHOLE PRESSURE (PSIA)	512.3

SAN JUAN 29-7 #91 MESAVERDE - (CURRENT)

FLOWING AND STATIC BHP CULLENDER AND SMITH METHOD

VERSION 1.0 3/13/94

GAS GRAVITY	0.703
COND. OR MISC. (C/M)	С
%N2	0.24
%CO2	0.9
%H2S	0
DIAMETER (IN)	2.375
DEPTH (FT)	5749
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	150
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	1095
BOTTOMHOLE PRESSURE (PSIA)	1289.1

SAN JUAN 29-7 #91 MESAVERDE - (ORIGINAL)

Page No.: 11
Print Time: Thu Oct 03 11:41:48 1996
Property ID: 4493
Property Name: SAN JUAN 29-7 UNIT | 91 | : : 3890 CF: 93 SIP: Table Name: K:\ARIES\RR97PDP\TEST.DBF

DATE	CUM_GAS Mcf	M SIWHP
10/09/52	0	1095.0
10/06/53	36000	946.0
06/16/54	77000	744.0
08/24/55	154000	915.0
10/15/56	225000	938.0
10/16/57	289000	677.0
03/30/58	320000	877.0
03/29/59	385000	894.0
09/06/60	467000	804.0
03/28/61	501000	938.0
03/13/62	550000	717.0
02/12/63	585000	768.0
07/16/64	654000	900.0
02/25/65	686000	878.0
02/28/66	743000	830.0
03/03/67	803000	885.0
03/05/68	872000	844.0
05/27/69	953771	822.0
08/18/70	1121786	783.0
03/30/71	1169585	771.0
06/12/72	1276918	653.0
07/09/73	1364557	7 7 2.0
08/21/74	1460887	749.0
04/20/76	1609048	683.0
05/16/78	1798246	592.0
07/18/80	1962922	744.0
05/19/82	2073183	518.0
09/19/84	2151008	494.0
10/23/89	2270862	692.0
02/20/91	2452441	540.0
07/10/91	2468703	552.0
06/01/93	2694365	443.0

SAN JUAN 29-7 #129M

CURRENT DAKOTA PRESSURE (BASED ON CURRENT AVERAGE OF OFFSET WELLS)

FLOWING AND STATIC BHP CULLENDER AND SMITH METHOD

VERSION 1.0 3/13/94

GAS GRAVITY	0.694
COND. OR MISC. (C/M)	С
%N2	0.54
%CO2	1.49
%H2S	0
DIAMETER (IN)	1.5
DEPTH (FT)	7555
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	200
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	652
BOTTOMHOLE PRESSURE (PSIA)	784.2

OFFSET DAKOTA WELLS - CURRENT PRESSURE

SAN JUAN 29-7 UNIT #129 DAKOTA-CURRENT	690
SAN JUAN 29-7 UNIT #130 DAKOTA-CURRENT	817
SAN JUAN 29-7 UNIT #49A DAKOTA-CURRENT	801
SAN JUAN 29-7 UNIT #45A DAKOTA-CURRENT	768
SAN JUAN 29-7 UNIT #44A DAKOTA-CURRENT	435
SAN JUAN 29-7 UNIT #65A DAKOTA-CURRENT	400
AVERAGE SURFACE PRESSURE	652

NOTE: SEE OFFSET WELL PLAT

FLOWING AND STATIC BHP CULLENDER AND SMITH METHOD

VERSION 1.0 3/13/94

GAS GRAVITY	0.694
COND. OR MISC. (C/M)	С
%N2	0.54
%CO2	1.49
%H2S	0
DIAMETER (IN)	1.5
DEPTH (FT)	7555
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	200
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	2743
BOTTOMHOLE PRESSURE (PSIA)	3368.2

SAN JUAN 29-7 UNIT #129 DAKOTA-ORIGINAL

Page No.: 10

Print Time: Thu Oct 03 11:41:48 1996

Property ID: 2097
Property Name: SAN JUAN 29-7 UNIT | 129 | : : 398 CF: 92 SIP: Table Name: K:\ARIES\RR97PDP\TEST.DBF

	CUM_GAS Mcf				
09/20/85 12/11/85 09/05/86 06/02/87 08/03/88 04/04/90 04/22/90 04/29/92 05/28/92	51031 97694 123427 230968 335273 335273 429397	1566.0 1250.0 1321.0 796.0 784.0 765.0	e original	Parent	we I l

Page No.: 1
Print Time: Mon Nov 04 13:31:10 1996

Property ID: 2098
Property Name: SAN JUAN 29-7 UNIT | 130 | 1517-1
Table Name: K:\ARIES\RR97PDP\TEST.DBF

DATE	CUM_GAS Mcf	M SIWHP Psi				
09/13/85 12/09/85 10/03/86 10/11/87 09/04/88 08/07/90 05/28/92	31267 58835 108144 140560 205466	2212.0 1512.0 1279.0 879.0 832.0 743.0 817.0	← which	Dak	Of	15ex 179m

Page No.: 1

Print Time: Mon Nov 04 13:32:23 1996
Property ID: 2110
Property Name: SAN JUAN 29-7 UNIT | 44A | 69346-1
Table Name: K:\ARIES\RR97PDP\TEST.DBF

DATE	CUM_GAS	M SIWHP Psi		D [(504
08/19/80 09/25/80 01/19/81 08/12/81 05/13/82 11/21/83 06/05/85 10/05/88 04/22/90 05/28/92	0 47561 123925 193190 289566 399445 568312 636068 731174	2542.0 2543.0 1574.0 921.0 743.0 812.0 547.0 902.0 562.0 522.0	Dakota 24-7	
04/16/93	786162	435.0	Current	

Page No.: 1

Print Time: Mon Nov 04 13:32:44 1996
Property ID: 2111
Property Name: SAN JUAN 29-7 UNIT | 45A | 1816-1
Table Name: K:\ARIES\RR97PDP\TEST.DBF

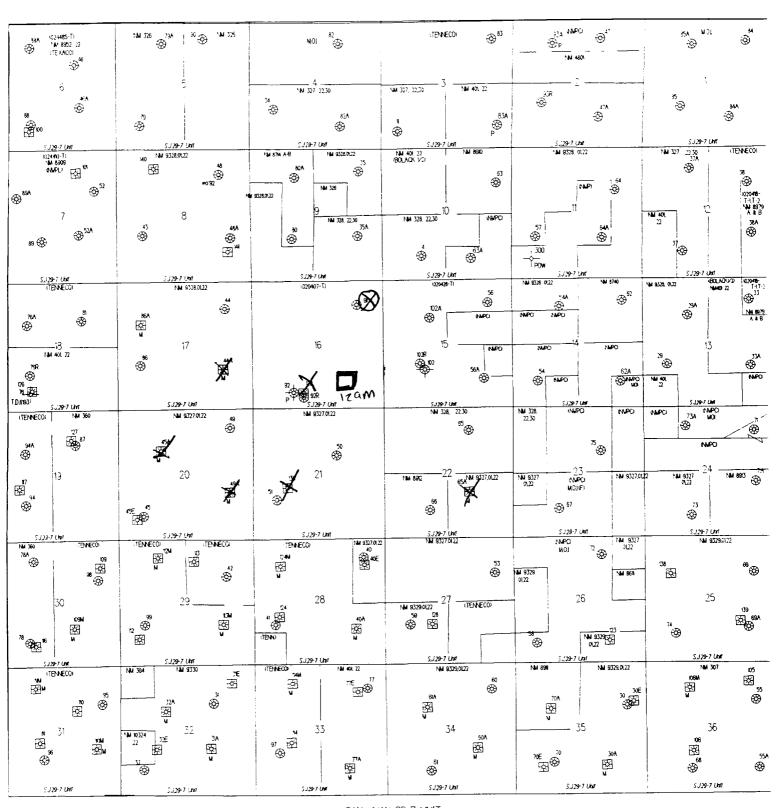
02/19/86		CUM_GAS Mcf		Daker	3000 2
04/08/90 386863 1033.0 04/16/93 581933 787.0 05/31/94 657937 768.0 \(\sigma \text{COUT}\)	11/28/86 10/11/87 09/04/88 04/08/90 04/16/93	31741 237652 272065 386863 581933	1556.0 1079.0 1150.0 1033.0 787.0	5a-7	THE STATE OF THE S

Page No.: 1
Print Time: Mon Nov 04 13:33:38 1996

	Time: Mon Nov	/ U4 T3.3	3.30 1770				
Propert	y ID: 2113						
Property	Name: SAN JUA	AN 29-7 U	NIT 49A	69348-	-1	- 0	
Table	Name: K:\ARI	ES\RR97PD	P\TEST.DBF		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
					1200	16 05060	
DATE	CUM GAS	M SIWHP					
	Mcf	Psi					
*************	***************************************				\sim \sim	N. 27: 13	
08/26/80	0	2014.0			74-1		
09/02/80	0	2015.0					
01/19/81	51021	2018.0					
08/12/81	189766	1320.0					
05/13/82	341305	1013.0					
11/21/83	516529	1020.0					
06/05/85	682115	874.0					
11/21/85	740935	846.0					
09/04/88	977979	797.0					
05/09/90	1084091	815.0					
05/28/92	1259966	853.0					
		525.0					
04/16/93	1321171	525.0	< willing	*			
05/31/94	1363337	801.0	\				

Page No.: 1
Print Time: Mon Nov 04 13:33:56 1996
Property ID: 2116
Property Name: SAN JUAN 29-7 UNIT | 65A | 69351-1
Table Name: K:\ARIES\RR97PDP\TEST.DBF

Table	Name: K:\ARI		500 800			
DATE	CUM_GAS Mcf	M SIWHP		Da	40+a	0 2
08/26/80 09/02/80 12/04/80 08/12/81 02/10/83 02/13/84 10/10/85 10/10/88 04/16/93	0 9656 77637 128426 151286 206269 258136	580.0 673.0	- was		* ***	10.7



X-Dakota Offset wells USED for Current AVG PSI B- MV Offset

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:
 - a) 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;
 - 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 Director

S E A L