ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -2040 South Pacheco, Santa Fe, NM 87505



2195

Date

ADMINISTRATIVE APPLICATION COVERSHEET

THIS	COVERSHEET	'IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATION FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE
Applica	tion Acror	nyms:
	[PC-F	[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location] [DD-Directional Drilling] [SD-Simultaneous Dedication] whhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling] Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement] [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion] [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase] alified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]
[1]	TYPE OF [A	APPLICATION - Check Those Which Apply for [A]
	Ch [B	neck One Only for [B] or [C] Commingling - Storage - Measurement DHC □ CTB □ PLC □ PC □ OLS □ OLM
	[C	Injection - Disposal - Pressure Increase - Enhanced Oil Recovery WFX PMX SWD IPI EOR PPR
[2]	NOTIFIC [A	CATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply Working, Royalty or Overriding Royalty Interest Owners
	[B	Offset Operators, Leaseholders or Surface Owner
	[C	Application is One Which Requires Published Legal Notice
	[D	Notification and/or Concurrent Approval by BLM or SLO U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
	[E	For all of the above, Proof of Notification or Publication is Attached, and/or,
	[F] Waivers are Attached
[3]	INFORM	LATION / DATA SUBMITTED IS COMPLETE - Certification
Regula approv ORRI)	itions of the al is accurate is common	nat I, or personnel under my supervision, have read and complied with all applicable Rules and e Oil Conservation Division. Further, I assert that the attached application for administrative ate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, n. I understand that any omission of data (including API numbers, pool codes, etc.), pertinent any required notification is cause to have the application package returned with no action taken.
	N	ote: Statement must be completed by an individual with managerial and/or supervisory capacity.

Print or Type Name

Signature

<u>DISTRICT I</u>

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

State of New Mexico
Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION

Form C-107-A New 3-12-96

DISTRICT II

Operator

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

2040 S. Pacheco Santa Fe, New Mexico 87505-6429

Address

APPROVAL PROCESS:
X Administrative ____Hearing

DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410-1693

Burlington Resources Oil & Gas Company

APPLICATION FOR DOWNHOLE COMMINGLING

PO Box 4289, Farmington, NM 87499

EXISTING WELLBORE
__YES __x_NO

San Juan 27-5 Unit	144M	I 35-27N-05W	Rio Arriba	
Lease	Well No.	Unit Ltr Sec - Twp - Rge	County Spacing Unit Lease Types: (check 1 or more)	
OGRID NO14538 Property Cod	de7454 API NO3	0-XXXFederalx,	State, (and/or) Fee	
The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediat Zone	Zone	
Pool Name and Pool Code	Blanco Mesaverde - 72319		Basin Dakota - 71599	
Top and Bottom of Pay Section (Perforations)	will be supplied upon comp	oletion	will be supplied upon completion	
3. Type of production (Oil or Gas)	gas		gas	
Method of Production (Flowing or Artificial Lift)	flowing		flowing	
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current	(Current) a. 590 psi (see attachment	a.	a. 898 psi (see attachment)	
Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated or Measured Original	(Original) b. 1346 psi (see attachmer	nt) b.	b. 3069 psi (see attachment)	
6. Oil Gravity (API) or Gas BTU Content	BTU 1243		BTU 1111	
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	Date: n/a	Date:	Date: n/a	
* If Producing, give data and oil/gas/water water of recent test (within 60 days)	Rates:	Rates:	Rates:	
8. Fixed Percentage Allocation Formula -% for each zone (total of %'s to equal 100%)	Oil: Gas: % will be supplied upon completion	Oil: Gas: %	Oil: % Gas: % will be supplied upon completion	
10. Are all working, overriding, and ro If not, have all working, overridin Have all offset operators been giv	oyalty interests identical in g, and royalty interests bee ven written notice of the pro	all commingled zones? on notified by certified mail? oposed downhole comminglin		
production be recovered, and wi	Il the allocation formula be	reliablex YesNo	•	
12. Are all produced fluids from all commingled zones compatible with each other?x_Yes No 13. Will the value of production be decreased by commingling?Yes _X_No (If Yes, attach explanation)				
			of Public Lands or the United States Bureau of	
15. NMOCD Reference Cases for Rule				
* For concern curve for e * For zones with no pro * Data to support alloca * Notification list of all o	each zone for at least one your control of the cont	ts spacing unit and acreage dear. (If not available, attach eproduction rates and supportion interests for uncommon intered to support commingli	xplanation.) ng data.	
I hereby certify that the informa	//.		·	
SIGNATURE: \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	TITLE	: Production Engineer	DATE: 1-25-99	
TYPE OR PRINT NAME: Dan	Voecks TELEI	PHONE NO.: (505)	326-9700	

District I PO Box 1980, Hobbs, NM 88241-1980

District II PO Drawer DD. Artesia, NM 88211-0719

District III 1000 Rio Brazos Ad., Aztec, NM 87410

District IV PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico Energy, Minerals & Natural Resources Department

Revised February 21, 1994 Instructions on back Submit to Appropriate District Office

State Lease - 4 Copies Fee Lease - 3 Copies

Form C-102

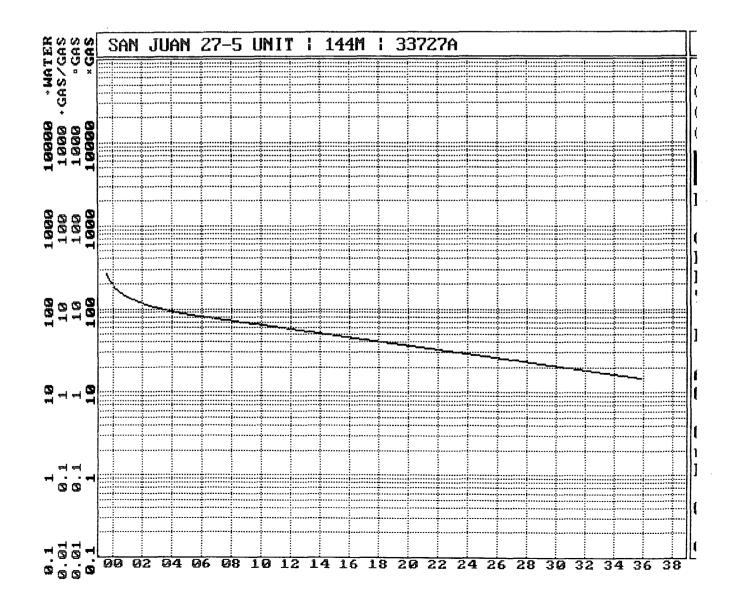
AMENDED REPORT

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

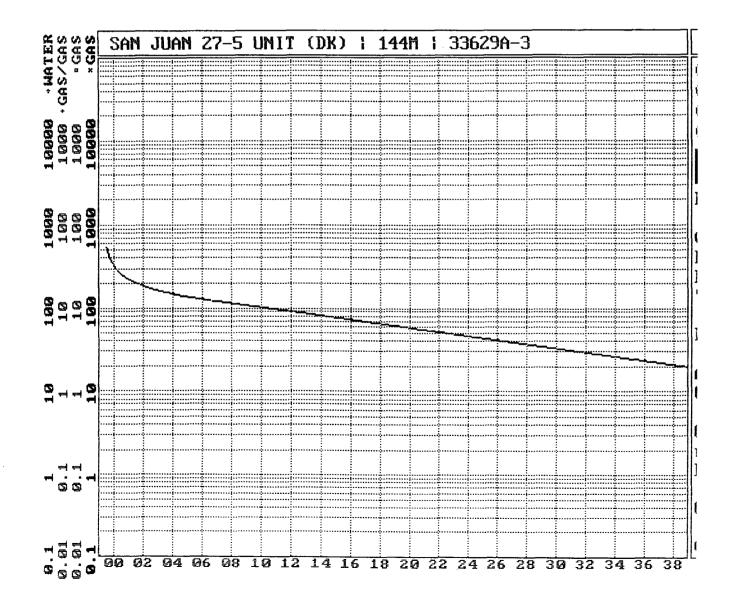
WELL LOCATION AND ACREAGE DEDICATION PLAT *Pool Code Pool Name 'API Number 30-039-72319/71599 Blanco Mesaverde/Basin Dakota Well Number *Property Code Property Name SAN JUAN 27-5 UNIT 144M 7454 OGRID No. *Elevation *Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY 7264' 14538 ¹⁰ Surface Location Township Range Feet from the Lot Idn North/South line County U or lot no. Section Feet from the East/West line RIO 27N 5W 995 Ι 35 1685 SOUTH EAST ARRIBA ¹¹Bottom Hole Location If Different From Surface Ut or lot no. Township Range Lot Idn Feet from the North/South line Feet from the East/West line County MV-E/304.54 13 Joint or Infill 14 Consolidation Code ¹⁵ Order No. DK-S/320 NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION 17 OPERATOR CERTIFICATION 2691.481 2640.66 hereby certify that the information contained herein is rue and complete to the best of my knowledge and belief 2 1 40 ∞ Signature <u>Peggy Bradfield</u>

Printed Name 3 4 5 6 Regulatory Administrato: Title Date 5439 18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this pla-was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief. NMSF-079493A 995 AUGUST 12, 1998 32 NMSF-079493A Date of Survey S 257 685 5314.98

San Juan 27-5 Unit #144M Expected Production Mesaverde Formation



San Juan 27-5 Unit #144M Expected Production Dakota Formation



San Juan 27-5 Unit #144M

Bottom Hole Pressures Flowing and Static BHP Cullender and Smith Method Version 1.0 3/13/94

Mesaverde	Dakota	Dakota		
MV-Current	DK-Current			
GAS GRAVITY COND. OR MISC. (C/M) C %N2 0.26 %CO2 0.74 %H2S 0 DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) FLOWRATE (MCFPD) SURFACE PRESSURE (PSIA) D.73 0.73 0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.76 0.76 0.77 0.7	GAS GRAVITY COND. OR MISC. (C/M) %N2 %CO2 %H2S DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) FLOWRATE (MCFPD) SURFACE PRESSURE (PSIA) BOTTOMHOLE PRESSURE (PSIA)	0.649 C 0.21 1.08 0 1.5 7385 60 198 0 758		
MV-Original	DK-Original			
GAS GRAVITY COND. OR MISC. (C/M) %N2 0.26 %CO2 0.74 %H2S 0 DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) SURFACE PRESSURE (PSIA) BOTTOMHOLE PRESSURE (PSIA) 1346.0	GAS GRAVITY COND. OR MISC. (C/M) %N2 %CO2 %H2S DIAMETER (IN) DEPTH (FT) SURFACE TEMPERATURE (DEG F) BOTTOMHOLE TEMPERATURE (DEG F) FLOWRATE (MCFPD) SURFACE PRESSURE (PSIA) BOTTOMHOLE PRESSURE (PSIA)	0.649 C 0.21 1.08 0 1.5 7385 60 198 0 2548		

Page No.: 2
Print Time: Wed Jan 20 08:05:13 1999

Property ID: 30
Property Name: SAN JUAN 27-5 UNIT | 12 | 49623A-1
Table Name: C:\ARIES\CMMNGLS\TEST.DBF

	M_SIWHP	CUM_GAS	DATE
	1133.0	0	12/06/55
San Juan 27-5 Unit #1	590.0	433124	08/28/70
<u>Sair Juair 27-3 Utill #1</u>	587.0	453994	04/08/71
M. Lorr	517.0	494135	08/09/72
Mesaverde Offset	472.0	602674	07/12/76
	642.0	634073	01/07/78
	642.0	647407	11/07/78
	666.0	724190	04/18/86
	507.0	753318	12/08/88

Page No.: 1 Print Time: Wed Jan 20 08:05:13 1999

Property ID: 29
Property Name: SAN JUAN 27-5 UNIT | 145 | 44059A-1
Table Name: C:\ARIES\CMMNGLS\TEST.DBF

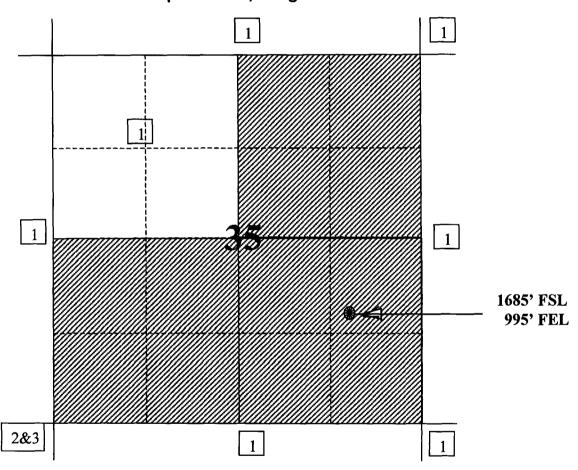
DATE	CUM_GAS Mcf		
05/15/72 07/07/72 08/20/73 07/15/74 09/04/75 08/08/77 05/02/79 11/02/81 09/21/83 06/05/85 10/11/88 05/29/90 07/02/92	23555 113215 170571 234699 329259 403252 485562 556468 613038 708214 770404	2548.0 1938.0 1140.0 1129.0 944.0 879.0 802.0 926.0 917.0 818.0 982.0 830.0 758.0	San Juan 27-5 Unit #144M Dakota Offset

BURLINGTON RESOURCES OIL AND GAS COMPANY

San Juan 27-5 Unit #144M OFFSET OPERATOR/OWNER PLAT Down-hole Commingle

Mesaverde (E/2) / Dakota (S/2) Formations Well

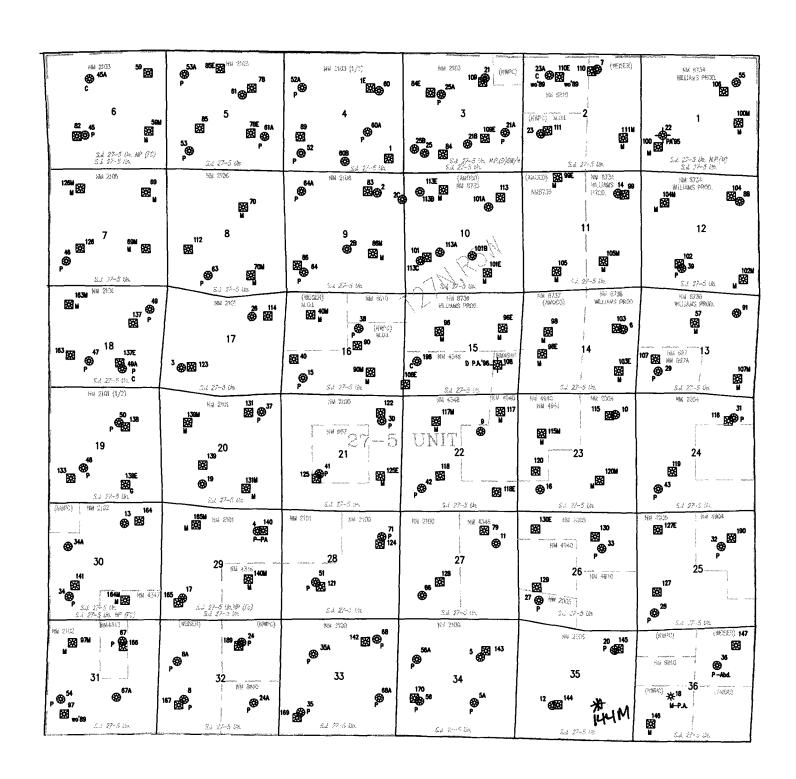
Township 27 North, Range 5 West



- 1) Burlington Resources
- 2) Amoco Production Company Attention: Steve TrefzPO Box 800Denver, Colorado 80201
- 2) Conoco, Inc.

Attention: Lori Thorpe 10 Dest Drive, Suite 100W Midland, Texas 79705

San Juan 27-5 Unit #144M Blanco Mesaverde / Basin Dakota 27N - 5W - 35



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. 11626 ORDER NO. R-10694

APPLICATION OF BURLINGTON RESOURCES
OIL & GAS COMPANY FOR THE ESTABLISHMENT
OF A DOWNHOLE COMMINGLING "REFERENCE
CASE" FOR ITS SAN JUAN 27-5 UNIT PURSUANT
TO DIVISION RULE 303.E AND THE ADOPTION
OF SPECIAL ADMINISTRATIVE RULES THEREFOR.
SAN JUAN COUNTY, NEW MEXICO.

PIO ARRIBA

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 12th 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 27-5 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 commingie (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 27-5 Unit which encompasses some 23,043 acres in Township 27 North, Range 5 West, NMPM, San Juan County, New Mexico.
- (5) Within the San Juan 27-5 Unit, the applicant currently operates one hundred and one (101) Basin-Dakota Gas Pool wells, one hundred and five (105) Blanco-Mesaverde Gas Pool wells, eighty-seven (87) South Blanco-Pictured Cliffs and Tapacito-Pictured Cliffs Gas Pool wells, and four (4) 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 27-5 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 27-5 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 27-5 Unit: and
- d) establish a "reference case" or an administrative procedure for authorizing the downhole commungling of existing or future drilled wells within the San Juan 27-5 Unit without additional nonce 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 27-5 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 583 MMCFG and 426 MMCFG, respectively;
 - c) the average initial producing rate for a newly drilled or recompleted Dakota and Pictured Cliffs gas well is approximately 393 MCFGD and 63 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 27-5 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 27-5 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 were approximately 3.141 psi and 1.118 psi, respectively; and.
- b) the average current shut-in bottomhole pressure within the Dakora and Pictured Cliffs formations are approximately 1.032 psi and 441 psi, respectively.
- (10) There is sufficient pressure data available within the San Juan 27-5 Unit so as to except pressure criteria as proposed by the applicant.
- (11) The applicant testified that various allocation methods will be unliked for downhole commingled wells within the San Juan 27-5 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 27-5 Unit the applicant presented evidence and testimony which indicates that:
 - a) the interest ownership between two zones within a given weilbore in the San Juan 27-5 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 27-5 Unit every time a Form C-107-A is submitted to the Division. There is a considerable number of such interest owners within the unit:

- c) providing notice to each interest owner within the San Juan 27-5
 Unit of subsequent downnoise commingtings is unnecessary and is
 an excessive burden on the applicant:
- d) the downhole commingling of wells within the San Juan 27-5 Unit Area will benefit working, royalty, and overriding royalty interest owners. In addition, the downhole commingling of wells within the San Juan 27-5 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 27-5 Unit for obtaining approval for subsequent downhole commingled wells without notice to Unit interest owners, provided however that, all other provisions comained within Division Rule No. 303.C. are complied with.
- (15) Approval of the proposed "reference cases" for marginal economic criteriapressure 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 C107-A, will provide the applicant a streamlined method for obtaining downhole
 comminging approvals within the San Juan 27-5 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 downhold commingling of Dakota. Mesaverde. Fruitland Coal and Pictured Cliffs gas production within existing or future drilled wells within the San Juan 27-5 Unit. San Juan County New Mexico. is hereby approved.

- (2) Upon filing of Division Form No. C-107-A's for weils subsequently downhole commungled within the San Juan 27-5 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 27-5 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 27-5 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 I/ LEMAY

Director