

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

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

APPROVAL PROCESS :

☐ X Administrative ☐ Hearing

EXISTING WELLBORE

☒ X YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

BURLINGTON RESOURCES OIL & GAS COMPANY

PO Box 4289, Farmington, NM 87499

Operator

Address

San Juan 27-5 Unit

86M

J 9-27-5

Rio Arriba

Lease Well No. Unit Ltr. - Sec - Twp - Rge County  
Spacing Unit Lease Types: (check 1 or more)  
OGRID NO. 14538 Property Code 7455 API NO. 30-039-22394 Federal ☒ X State (and/or) Fee

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Blanco Mesaverde 72319	<b>RECEIVED</b> MAR 27 1997 <b>OIL CON. DIV.</b> Ltr. 3	Basin Dakota 71599
2. Top and Bottom of Pay Section (Perforations)	5821' - 6696'		8352' - 8558'
3. Type of production (Oil or Gas)	Gas		Gas
4. Method of Production (Flowing or Artificial Lift)	Flowing		Flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated or Measured Original	a. (Current) 490 psia b. (Original) 1225 psia	a. b.	a. (Current) 760 psia b. 3063 psia
6. Oil Gravity (°API) or Gas BTU Content	1168		1170
7. Producing or Shut-In?	Producing		Producing
Production Marginal? (yes or no)	Yes		Yes
* If Shut-In and oil/gas/water rates of last production <small>Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data</small>	Date: Rates: •	Date: Rates:	Date: Rates:
* If Producing, give data and oil/gas/water of recent test (within 60 days)	Date: 01-31-97 Rates: 0.48 bbls/d 31 mcf/d	Date: Rates:	Date: 01-31-97 Rates: 0.52 bbls/d 126 mcf/d
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

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.
10. Are all working, overriding, and royalty interests identical in all commingled zones? ☐ Yes ☒ X No  
If not, have all working, overriding, and royalty interests been notified by certified mail? ☐ Yes ☒ X No  
Have all offset operators been given written notice of the proposed downhole commingling? ☐ Yes ☒ X No
11. Will cross-flow occur? ☒ X Yes ☐ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☒ X Yes ☐ No (If No, attach explanation)
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)
14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☒ X Yes ☐ No
15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). Reference Order # R-10694 attached
16. ATTACHMENTS:  
\* C-102 for each zone to be commingled showing its spacing unit and acreage dedication.  
\* Production curve for each zone for at least one year. (If not available, attach explanation.)  
\* For zones with no production history, estimated production rates and supporting data.  
\* Data to support allocation method or formula.  
\* Notification list of all offset operators.  
\* Notification list of working, overriding, and royalty interests for uncommon interest cases.  
\* Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Kevin J. Midkiff TITLE Production Engineer DATE 03-24-97

TYPE OR PRINT NAME Kevin Midkiff For ROS TELEPHONE NO. ( 505 ) 326-9700

All distances must be from the outer boundaries of the Section.

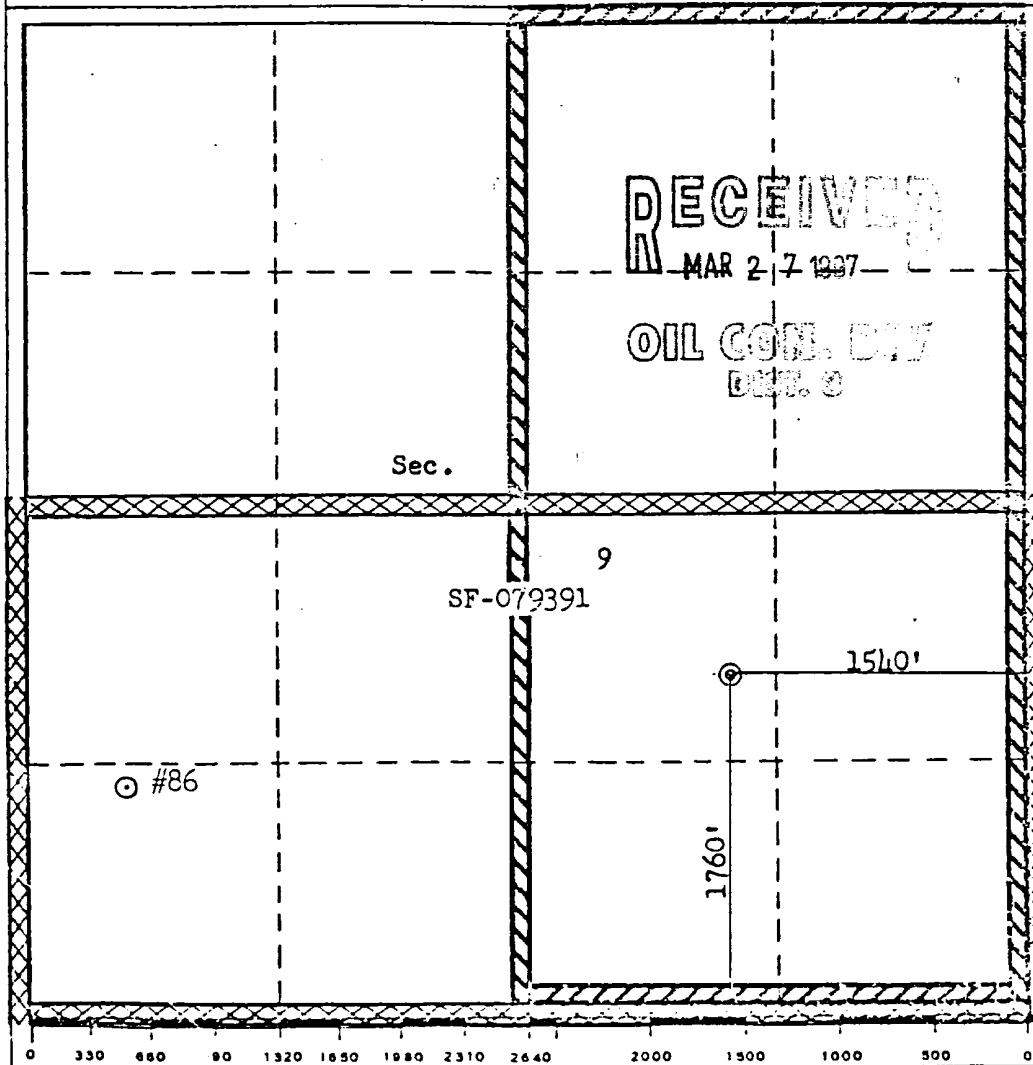
Operator <b>EL PASO NATURAL GAS COMPANY</b>			Lease <b>SAN JUAN 27-5 UNIT (SF-079391)</b>		Well No. <b>86-M</b>
Unit Letter <b>J</b>	Section <b>9</b>	Township <b>27N</b>	Range <b>5W</b>	County <b>Rio Arriba</b>	
Actual Footage Location of Well: <b>1760</b> feet from the <b>South</b> line and <b>1540</b> feet from the <b>East</b> line					
Ground Level Elev. <b>7334</b>	Producing Formation <b>MESA VERDE - DAKOTA</b>		Pool <b>BLANCO MESA VERDE BASIN DAKOTA</b>	Dedicated Acreage: <b>320.00 &amp; 320.00</b> Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☒ Yes ☐ No If answer is "yes," type of consolidation unitization

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission. REISSUED TO SHOW S/2 DEDICATION FOR DAKOTA & E/2 DEDICATION FOR MESA VERDE 6/19/1980



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

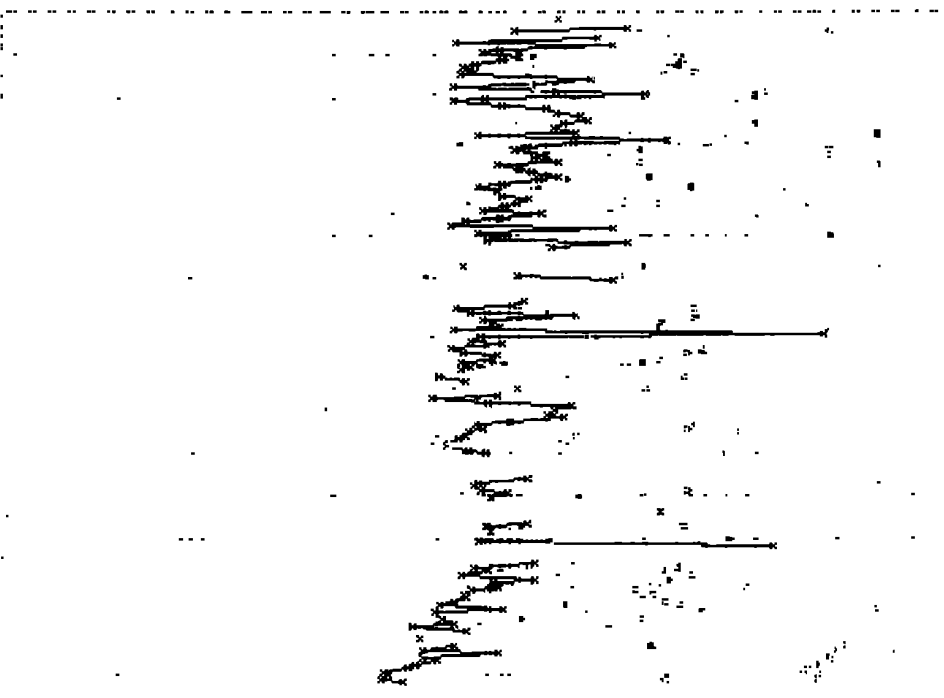
Name W. B. Grier  
Position  
Drilling Clerk  
Company  
El Paso Natural Gas  
Date  
June 20, 1980

I hereby certify that the well location shown on this plat 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 knowledge and belief.

Date Surveyed  
April 1, 1980  
Registered Professional Engineer  
and/or Land Surveyor  
Fred B. Kerr Jr.  
Certification No.  
3950

SUN JUN 27 5 UNIT : 00M : HESAQUERDE

WATER	OIL/GAS	OIL	GAS
10000	1000	1000	10000
1000	100	100	100
100	10	10	100
10	1	1	10
1	0.1	0.1	1
0.1	0.01	0.01	0.1
0.01	0.001	0.001	0.01
0.001	0.0001	0.0001	0.001



Prop 7 \*

☒ \*GAS Mcf/d  
☐ \*OIL Bbl/d  
☐ \*OIL/GAS  
☐ \*WATER Bbls/d

☒ RateTime  
☒ Semi Log

81828384 858687 888990919293949596979899000102030405

Major = GAS

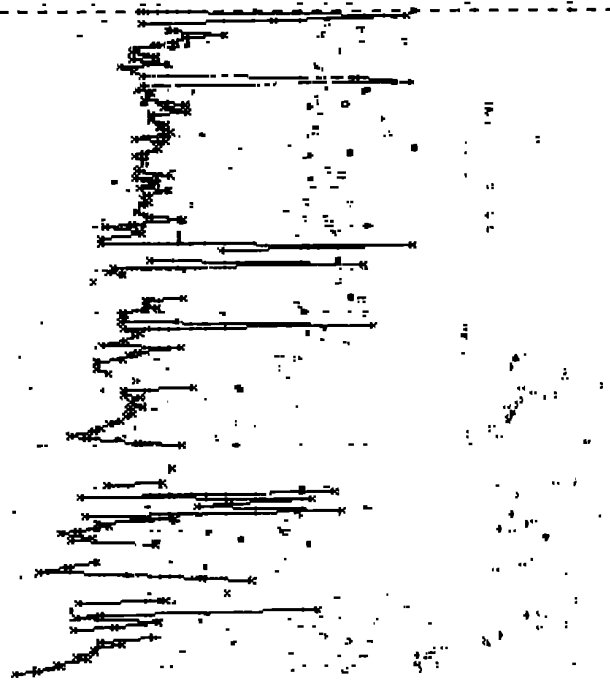
SUN JUN 27 5 UNIT : UGM : DOKOTO

\*WATER 10000  
 \*OIL/GAS 1000  
 \*OIL 1000  
 \*GAS 10000

- Prop 72 \*  
☒ \*GAS Mcf/d  
☐ \*OIL Bbl/d  
☐ \*OIL/GAS  
☐ \*WATER Bbls/d



RateTime  
Semi Log



8182 8384 8586 8788 8990 9192 9394 9596 9799 9900 0102 0304 05

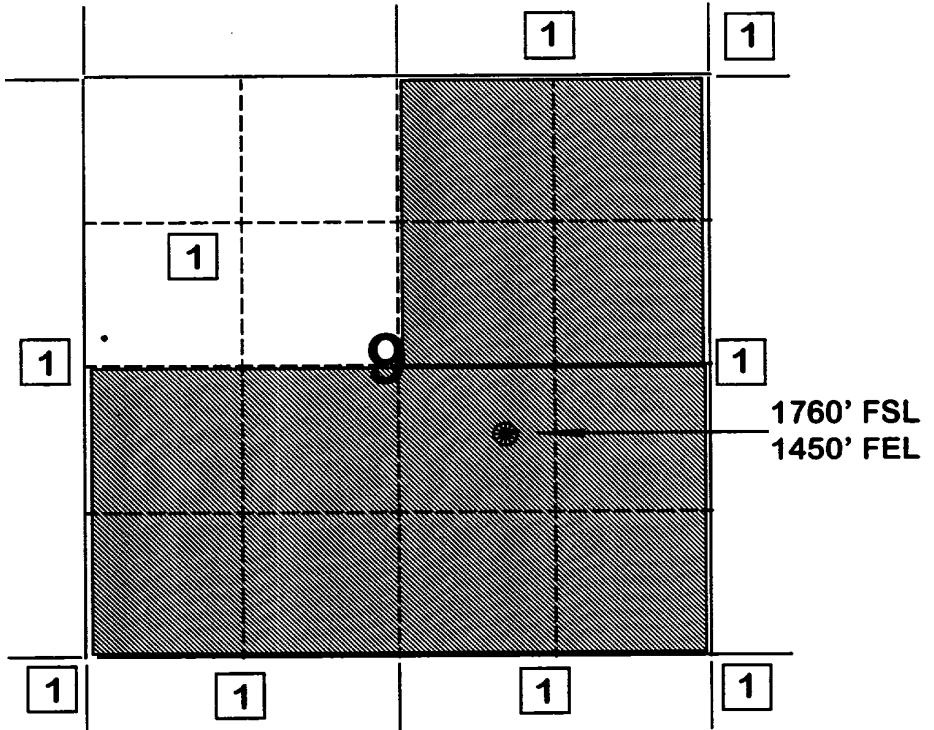
Major = GAS

***BURLINGTON RESOURCES OIL AND GAS COMPANY***

**San Juan 27-5 Unit #86M  
OFFSET OPERATOR \ OWNER PLAT**

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

**Township 27 North, Range 5 West**



**1) Burlington Resources Oil and Gas Company**

UAN 27-5 UNIT | 86M | 53405A-1  
Table Name: K:\ARIES\RR97PDP\TEST.DBF

Mesa Verde

--DATE-- ---CUM GAS-- M SIWHP  
Mcf Psi

07/29/81	0	1031.0	Original
12/17/81	36108	701.0	
11/01/82	102924	588.0	
04/24/84	170793	559.0	
06/21/84	175783	568.0	
04/07/86	201681	647.0	
05/10/89	295507	631.0	
04/15/91	336890	680.0	
10/15/91	338422	692.0	
05/03/93	383148	493.0	
3/25/97	463747	420.0	Estimated from P/Z data

Page No.: 1

Print Time: Wed Feb 26 07:18:18 1997

Property ID: 1742

Property Name: SAN JUAN 27-5 UNIT | 86M | 53405B-1 Dakota

Table Name: K:\ARIES\RR97PDP\TEST.DBF

--DATE-- ---CUM GAS-- M SIWHP  
Mcf Psi

07/22/81	0	2435.0	Original
12/17/81	44712	1125.0	
11/01/82	110582	930.0	
02/22/84	158994	1096.0	
11/06/85	242152	1096.0	
05/19/88	325176	1473.0	
04/22/90	404301	1070.0	
07/28/92	475612	1024.0	
03/12/93	500903	1143.0	
3/25/97	614687	620.0	Estimated from P/Z data

**San Juan 27-5 Unit #86M**  
**Bottom Hole Pressures**  
**Flowing and Static BHP**  
**Cullender and Smith Method**  
Version 1.0 3/13/94

<b>Mesaverde</b>		<b>Dakota</b>	
<u><b>MV-Current</b></u>		<u><b>DK-Current</b></u>	
GAS GRAVITY	0.683	GAS GRAVITY	0.683
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.28	%N2	0.22
%CO2	0.79	%CO2	0.79
%H2S	0	%H2S	0
DIAMETER (IN)	1.5	DIAMETER (IN)	2.375
DEPTH (FT)	6259	DEPTH (FT)	8455
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	137	BOTTOMHOLE TEMPERATURE (DEG F)	198
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	420	SURFACE PRESSURE (PSIA)	620
BOTTOMHOLE PRESSURE (PSIA)	490.3	BOTTOMHOLE PRESSURE (PSIA)	759.5
<u><b>MV-Original</b></u>		<u><b>DK-Original</b></u>	
GAS GRAVITY	0.683	GAS GRAVITY	0.683
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.28	%N2	0.22
%CO2	0.79	%CO2	0.79
%H2S	0	%H2S	0
DIAMETER (IN)	1.5	DIAMETER (IN)	2.375
DEPTH (FT)	6259	DEPTH (FT)	8455
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	137	BOTTOMHOLE TEMPERATURE (DEG F)	198
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	1031	SURFACE PRESSURE (PSIA)	2435
BOTTOMHOLE PRESSURE (PSIA)	1224.6	BOTTOMHOLE PRESSURE (PSIA)	3063.3

FARMINGTON 1997 MONTHLY PRODUCTION FOR 53405A  
 SAN JUAN 27-5 UNIT 86M  
 BLANCO MESAVERDE (PRORATED GAS FIELD MESAVERDE ZONE

PHS030M1

DAYS =====			OIL =====			===== GAS =====								
MO	T	S	ON	PC	PROD	GRV	PC	PROD	ON	BTU	PRESS	WATER	PROD	C
1	2	F	31	02	15		01	974	31	1157	15.025			
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

15 - 31 = 0.48 6613/1  
 974 ÷ 31 = 31.4 MCFD

PF6 - RETURNS TO ANNUAL DISPLAY PF3 - TRANSFER TO UPDATE  
 PF10 - HELP INFORMATION PF9 - DISPLAY MONTHLY INJECTION  
 00/00/00 00:00:00:0 PRS 03/05/97

B MY JOB NUM LU #5

FARMINGTON 1997 MONTHLY PRODUCTION FOR 53405B  
 SAN JUAN 27-5 UNIT 86M  
 BASIN DAKOTA (PRORATED GAS) FIELD DAKOTA ZONE

PHS030M1

DAYS =====			OIL =====			===== GAS =====								
MO	T	S	ON	PC	PROD	GRV	PC	PROD	ON	BTU	PRESS	WATER	PROD	C
1	2	F	31	02	16		01	3908	31	1084	15.025			
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

16 - 31 = 0.52 6613/1  
 3908 ÷ 31 = 126.1 MCFD

PF6 - RETURNS TO ANNUAL DISPLAY PF3 - TRANSFER TO UPDATE  
 PF10 - HELP INFORMATION PF9 - DISPLAY MONTHLY INJECTION  
 00/00/00 00:00:00:0 PRS 03/05/97

B MY JOB NUM LU #5

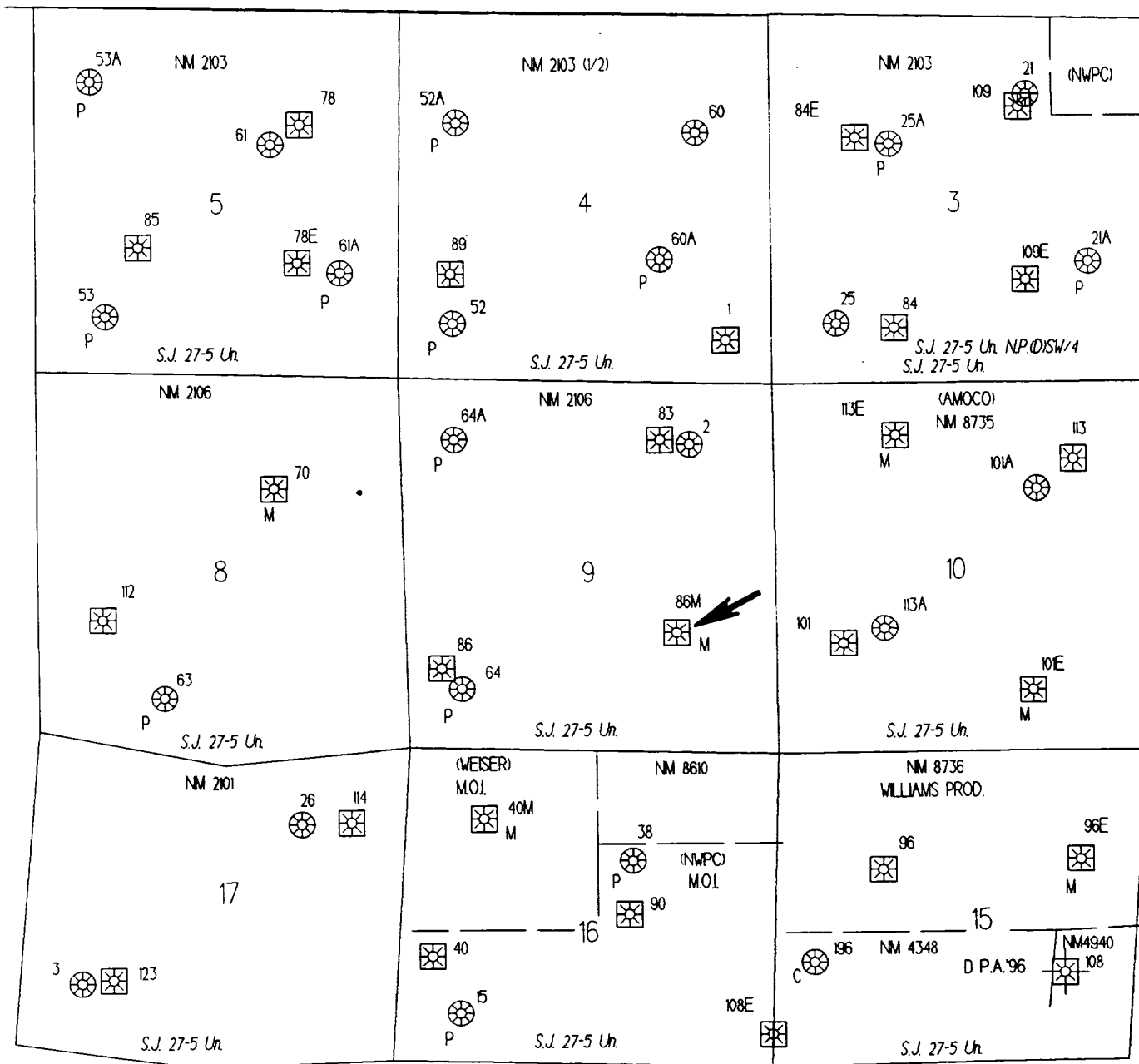


SAN JUAN 27-5 UNIT #86M

Mesaverde/Dakota

Sec. 9, T-27-N, R-5-W

Rio Arriba Co., NM



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.

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 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 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;

- 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 27-5 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 27-5 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 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 Dakota 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 utilized 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 wellbore 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 downhole comminglings 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 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 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 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, is hereby approved.

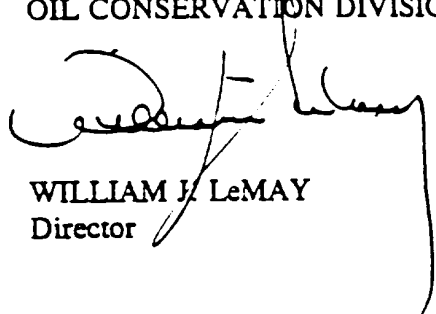
(2) Upon filing of Division Form No. C-107-A's for wells subsequently downhole commingled within the San Juan 27-5 Unit Area, the applicant shall not be required to submit supporting data to justify the classification of the Pictured Cliffs and Dakota formations as "marginal", supporting data to verify 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 J. LeMAY  
Director

S E A L