

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 87505-6429Form C-107-A
New 3-12-96

APPROVAL PROCESS :

☒ Administrative
☐ Hearing

APPLICATION FOR DOWNHOLE COMMINGLING

EXISTING WELLBORE

☒ YES ☐ NO

Burlington Resources Oil and Gas

PO Box 4289, Farmington, NM 87499

Operator

San Juan 29-7 Unit

#65-A

Address
J-22-29N-07W

Rio Arriba

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 14538

Property Code 7465

API NO. 30-039-21917

Federal ☒ State ☐ Fee ☐

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Mesa Verde - 72319		Dakota - 71599
2. Top and Bottom of Pay Section (Perforations)	5236'-6113'		7822'-8008'
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	(Current) a. 435 psi (see attachment) (Original) b. 820 psi (see attachment)		a. 256 psi (see attachment) b. 2169 psi (see attachment)
6. Oil Gravity (°API) or Gas BTU Content	BTU 1200		BTU 1026
7. Producing or Shut-In?	Producing		Shut-in
Production Marginal? (yes or no)	No		Yes
* If Shut-In and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data	Date: N/A Rates:		Date: 10/97 Rates: 6.1 mcfd
* If Producing, give data and oil/gas/water of recent test (within 60 days)	Date: 12/97 Rates: 362 mcfd 0.8 bopd		Date: 12/97 Rates: 0.0 mcfd 0.0 bopd
8. Fixed Percentage Allocation Formula -% for each zone (total of %'s to equal 100%)	Will be supplied upon completion.		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 ☒ No
If not, have all working, overriding, and royalty interests been notified by certified mail? ☐ Yes ☒ No
Have all offset operators been given written notice of the proposed downhole commingling? ☐ Yes ☒ No11. Will cross-flow occur? ☒ 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. ☒ Yes ☐ No (If No, attach explanation)12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes ☐ No13. Will the value of production be decreased by commingling? ☐ Yes ☒ 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. ☒ Yes ☐ No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). Reference Order # R-10697

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 L. Tom Loveland TITLE Engineer I DATE 03-02-98TYPE OR PRINT NAME L. Tom Loveland TELEPHONE NO. (505) 326-9700

All well locations must be from the outer boundaries of the Section.

CAT

Operator EL PASO NATURAL GAS COMPANY			Lease SAN JUAN 29-7 UNIT (SF-078424)		Well No. 65A
Unit Letter J	Section 22	Township 29N	Range 7W	County RIO ARriba	
Actual Footage Location of Well:					
1840 feet from the South		1760 feet from the East		Base	
Ground Level Elev. 6772	Producing Formation Mesa Verde - Dakota	Pool Basin Dakota	Dedicated Acreage: 320.00		
		Blanco Mesa Verde		320.00	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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.

NOTE: THIS PLAT IS REISSUED TO SHOW DUAL COMPLETION MESA VERDE & DAKOTA. 3-27-79

RECEIVED
MAR 4 1978

OIL CON. DIV.
DIST. 3

Sec

RECEIVED

U.S. DEPARTMENT OF THE INTERIOR
DURANGO, COLO.

#65

SF-078399

SF-078424

1760'

1840'

CERTIFICATION

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

Name

Drilling Clerk

Position

El Paso Natural Gas

Company

April 2, 1979

Date

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

August 17, 1978

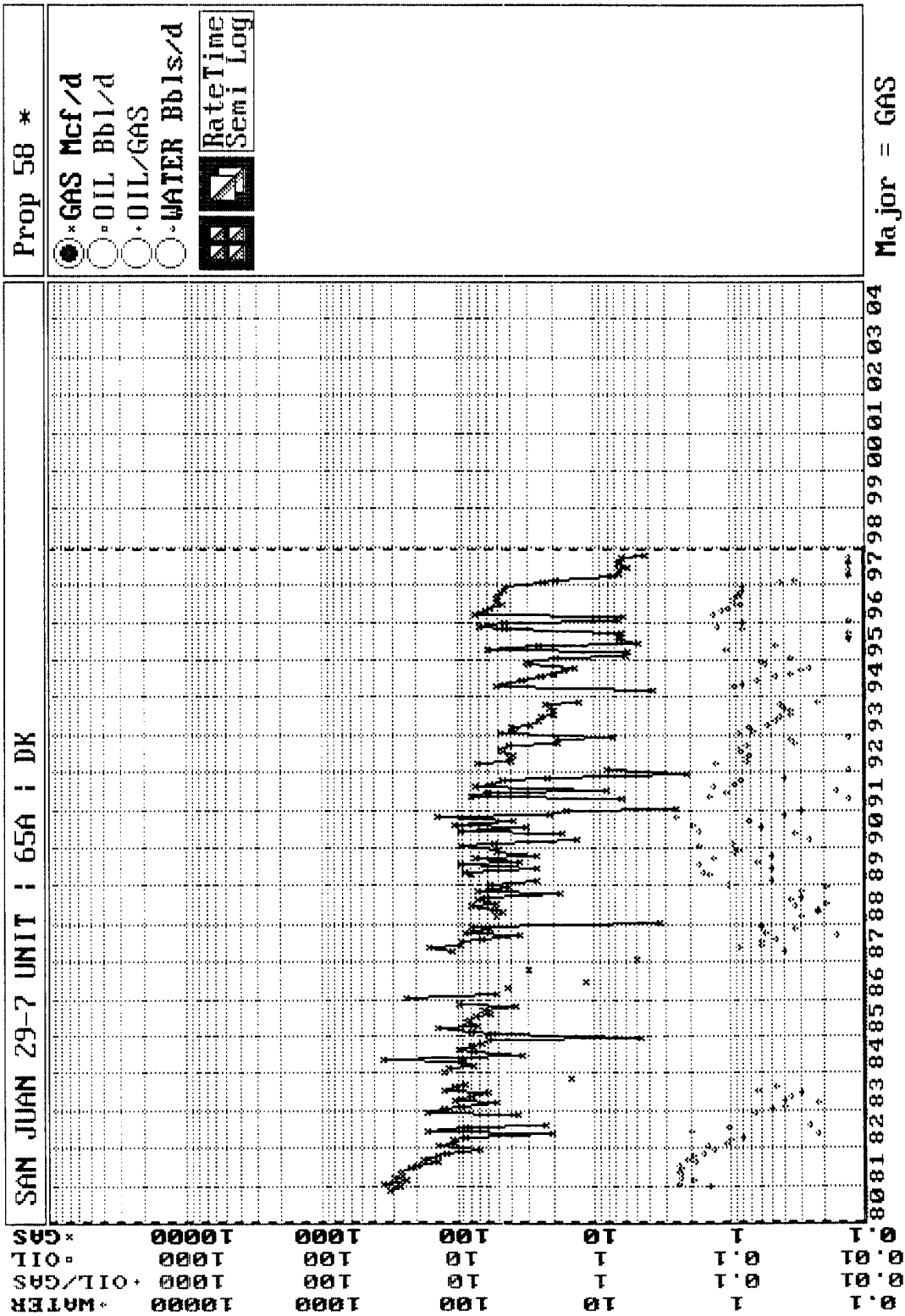
Prepared by Fred B. Kerr Jr.

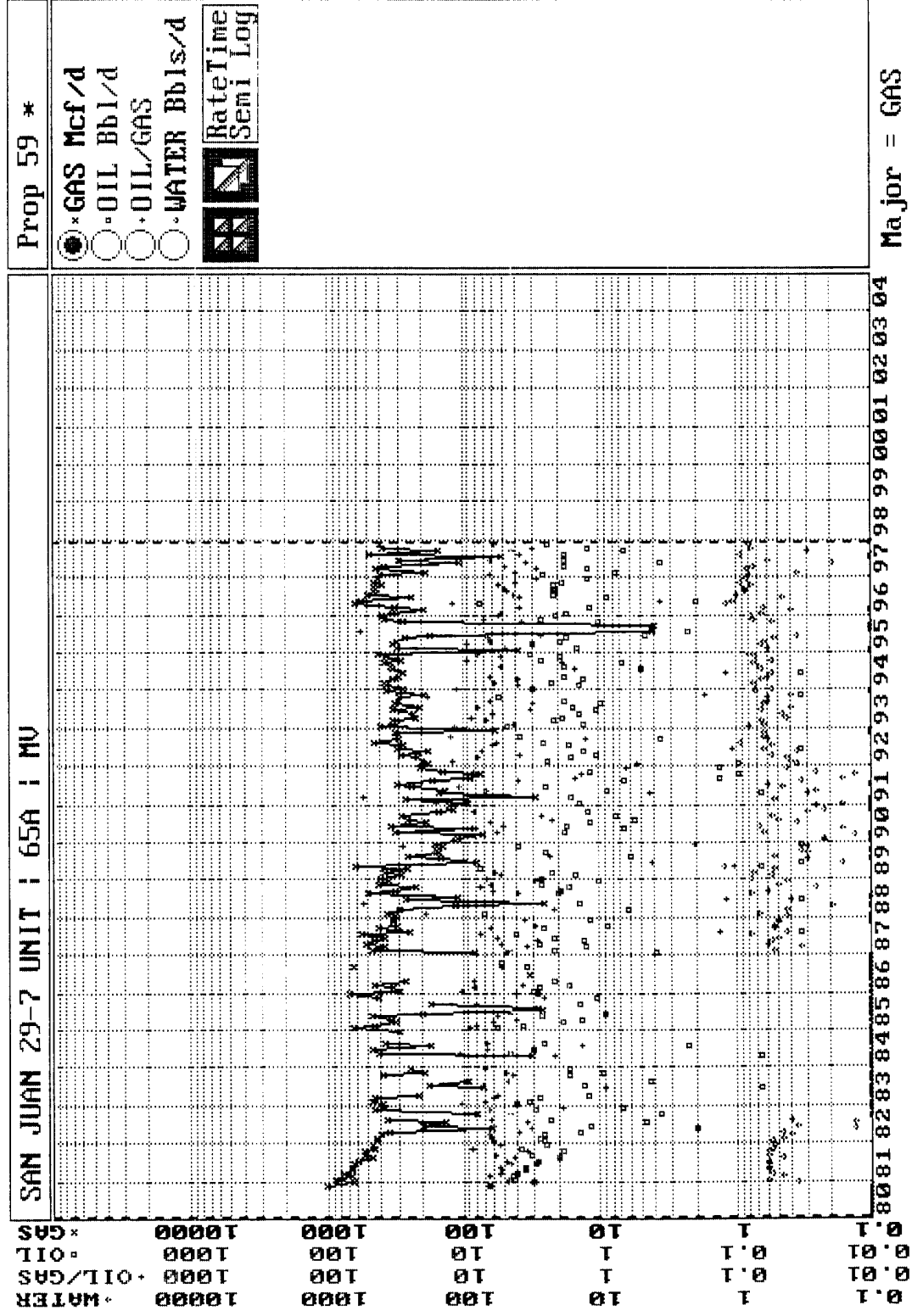
Fred B. Kerr Jr.

3950

SAN JUAN 29-7 UNIT : 65A : DK

Prop 58 *





San Juan 29-7 Unit #65A
Bottom Hole Pressures
Flowing and Static BHP
Cullender and Smith Method
Version 1.0 1/14/98

Mesaverde		Dakota	
<u>MV-Current</u>		<u>DK-Current</u>	
GAS GRAVITY	0.7	GAS GRAVITY	0.601
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.24	%N2	0.10
%CO2	0.94	%CO2	1.61
%H2S	0	%H2S	0
DIAMETER (IN)	7	DIAMETER (IN)	2.375
DEPTH (FT)	5675	DEPTH (FT)	7915
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	159	BOTTOMHOLE TEMPERATURE (DEG F)	198
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	378	SURFACE PRESSURE (PSIA)	219
BOTTOMHOLE PRESSURE (PSIA)	434.7	BOTTOMHOLE PRESSURE (PSIA)	256.0
<u>MV-Original</u>		<u>DK-Original</u>	
GAS GRAVITY	0.7	GAS GRAVITY	0.601
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.24	%N2	0.10
%CO2	0.94	%CO2	1.61
%H2S	0	%H2S	0
DIAMETER (IN)	7	DIAMETER (IN)	2.375
DEPTH (FT)	5675	DEPTH (FT)	7915
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	159	BOTTOMHOLE TEMPERATURE (DEG F)	198
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	707	SURFACE PRESSURE (PSIA)	1812
BOTTOMHOLE PRESSURE (PSIA)	819.6	BOTTOMHOLE PRESSURE (PSIA)	2169.0

Page No.: 1

Print Time: Mon Feb 09 15:10:00 1998

Property ID: 59

Property Name: SAN JUAN 29-7 UNIT | 65A | MV

Table Name: S:\ARIES\1MXJ\TEST.DBF

--DATE--	--CUM_OIL--	---CUM_GAS--	M SIWHP
	Bbl	Mcf	Psi

07/27/80		0	707.0	Original
09/02/80		0	708.0	
12/04/80		31447	582.0	
08/12/81		214317	458.0	
05/13/82		326424	484.0	
08/21/84		502364	502.0	
10/03/86		687082	507.0	
05/21/89		983085	524.0	
02/18/91		1092667	535.0	
07/15/91		1118778	547.0	
06/01/93		1288184	463.0	
12/31/97		1798091	378.0	Current estimated from P/z data

Page No.: 1

Print Time: Mon Feb 09 15:10:12 1998

Property ID: 58

Property Name: SAN JUAN 29-7 UNIT | 65A | DK

Table Name: S:\ARIES\1MXJ\TEST.DBF

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

08/26/80		0	1812.0	Original
09/02/80		0	1813.0	
12/04/80		9656	1722.0	
08/12/81		77637	557.0	
02/10/83		128426	646.0	
02/13/84		151286	580.0	
10/10/85		206269	673.0	
10/10/88		258136	462.0	
04/16/93		326247	400.0	
12/31/97		367303	219.0	Current estimated from P/z data

FARMINGTON 1997 MONTHLY PRODUCTION FOR 69352
 SAN JUAN 29-7 UNIT 65A
 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				02	77		01	12356		1192	15.025		25	
2				02	23		01	5606		1192	15.025		11	
3				02	37		01	13179		1192	15.025		26	
4				02	54	57.4	01	11331		1192	15.025		23	
5				02	11		01	3235		1192	15.025		6	
6	2	F	27	02	55		01	9030	27	1192	15.025		18	
7	2	F	31	02			01	1601	31	1192	15.025		3	
8	2	F	31	02	54		01	14531	31	1192	15.025		29	
9	2	F	30	02	20		01	4597	30	1192	15.025		9	
10	2	F	31	02	37	59.0	01	11979	31	1192	15.025		24	
11	2	F	30	02	73		01	12558	30	1192	15.025		25	
12	2	F	31	02	26		01	11208	31	1200	15.025		22	

$26 \div 31 = 0.84 \text{ bopd}$ $11208 \div 31 = 361.5 \text{ mcf/d}$

PF6 - RETURNS TO ANNUAL DISPLAY

PF3 - TRANSFER TO UPDATE

PF10 - HELP INFORMATION

PF9 - DISPLAY MONTHLY INJECTION

00/00/00 00:00:00:0

PRS 02/04/98

FARMINGTON 1997 MONTHLY PRODUCTION FOR 69351
 SAN JUAN 29-7 UNIT 65A
 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							01	729		1026	15.025		13	
2							01	575		1026	15.025		10	
3							01	227		1026	15.025		4	
4							01	199		1026	15.025		4	
5							01	199			15.025		4	
6	2	F	27				01	174	27		15.025		3	
7	2	F	31				01	199	31		15.025		4	
8	2	F	31				01	199	31		15.025		4	
9	2	F	30				01	193	30		15.025		4	
10	2	S	21				01	129	21		15.025		2	
11	2	S					01	0			15.025			
12	2	S					01	0			15.025			

129 ÷ 21 = 6.1 MCFD

PF6 - RETURNS TO ANNUAL DISPLAY
 PF10 - HELP INFORMATION

PF3 - TRANSFER TO UPDATE
 PF9 - DISPLAY MONTHLY INJECTION
 PRS 02/04/98

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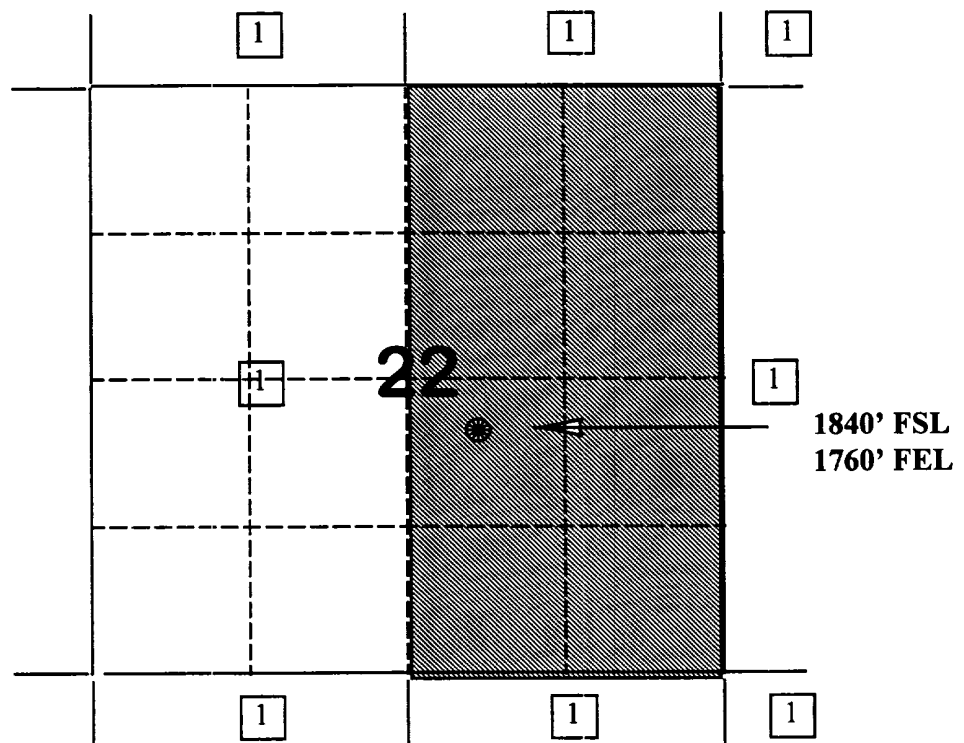
BURLINGTON RESOURCES OIL AND GAS COMPANY

San Juan 29-7 Unit #65A

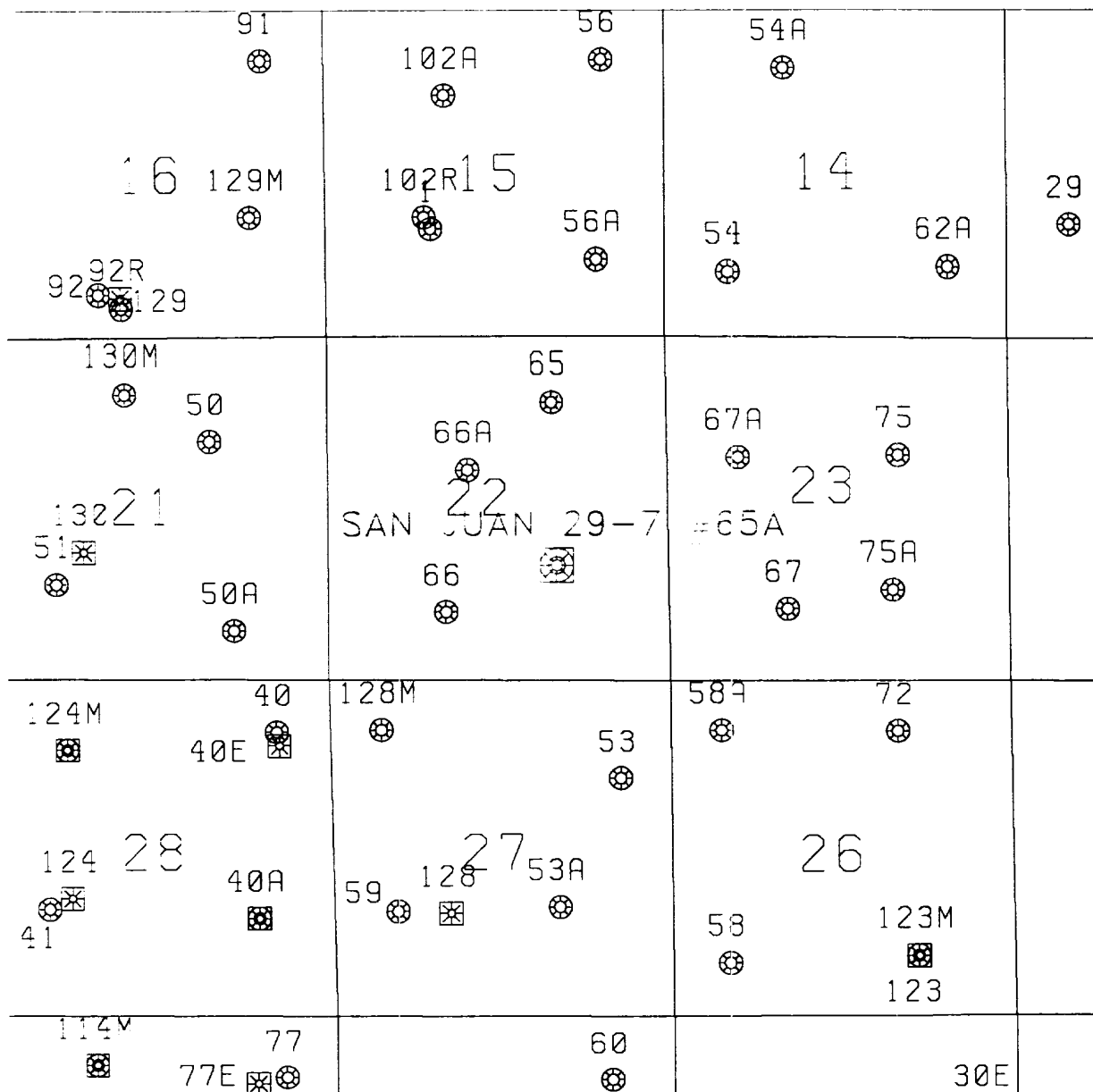
OFFSET OPERATOR/OWNER PLAT

Mesaverde / Dakota Formations Commingle Well

Township 29 North, Range 7 West



1) Burlington Resources



PLH 12/11/97

SAN JUAN 29-7 #65A
SEC. 22 T29N, R7W
MESAVERDE/DAKOTA

**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;
- 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.

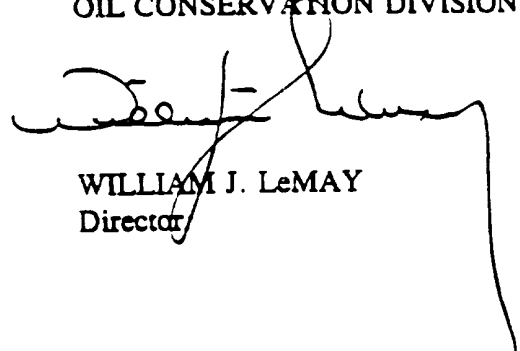
(3) In order to obtain Division authorization to downhole commingle wells within the San Juan 29-7 Unit, the applicant shall file a Form C-107-A with the Santa Fe and Aztec Offices of the Division. Such application shall contain all the information required under Rule No. 303.C. of the Division Rules 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.

CASE NO. 11629
Order No. R-10697
Page -6-

(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