

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 28-6 Unit 109M

Address

J-1-27N-6W

Rio Arriba

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 14538 Property Code 7462

API NO. 30-039-25450

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	Mesaverde - 72319		Dakota - 71599
2. Top and Bottom of Pay Section (Perforations)	4918'-5821'		7480'-7665'
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: Gas & Oil - Flowing: Current All Gas Zones: Estimated Current Measured Estimated or Measured	(Current) a. 724 psi (see attachment) (Original) b. 984 psi (see attachment)		a. 877 psi (see attachment) b. 2221 psi (see attachment)
6. Oil Gravity (°API) or Gas BTU Content	BTU 1148		BTU 1082
7. Producing or Shut-In?	Producing		Producing
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: N/A Rates:
* If Producing, give data and oil/gas/water of recent test (within 60 days)	Date: 11/1/98 Rates: 147 mcf/d 0.0 bopd		Date: 11/1/98 Rates: 69 mcf/d 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 ☒ No
11. 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 ☐ No
13. 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). R-10696
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 Production Engineer DATE 1/18/99TYPE OR PRINT NAME L. Tom Loveland TELEPHONE 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 Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-039-		Pool Code 72319/71599	Pool Name Blanco Mesa Verde/Basin Dakota
Property Code	Property Name San Juan 28-6 Unit		Well Number 109M
OGRID No. 14538	Operator Name MERIDIAN OIL INC.		Elevation 6485'

10 Surface Location

UL or lot no. J	Section 1	Township 27 N	Range 6 W	Lot Idn	Feet from the 1850	North/South line South	Feet from the 1555	East/West line East	County R.A.
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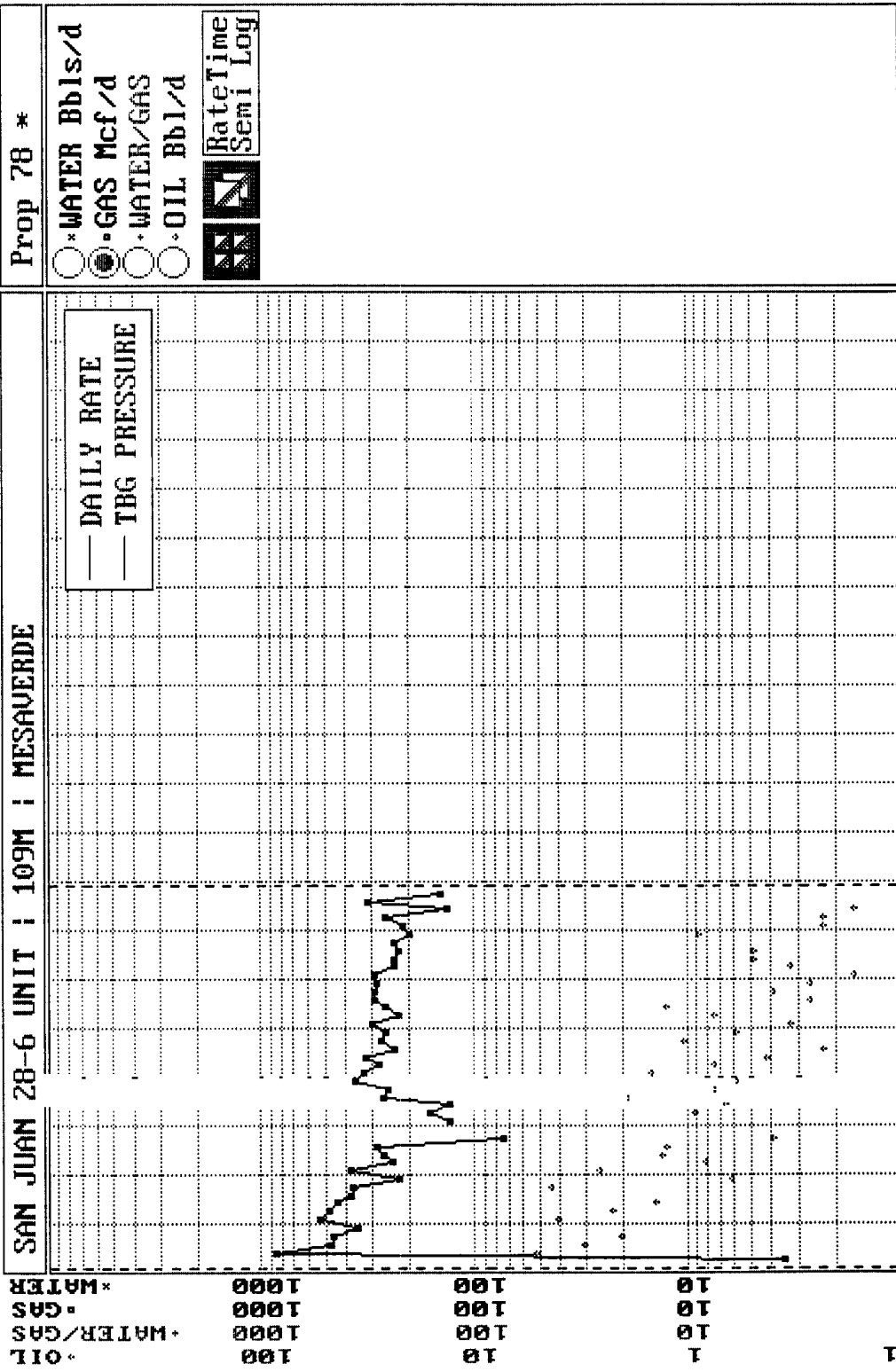
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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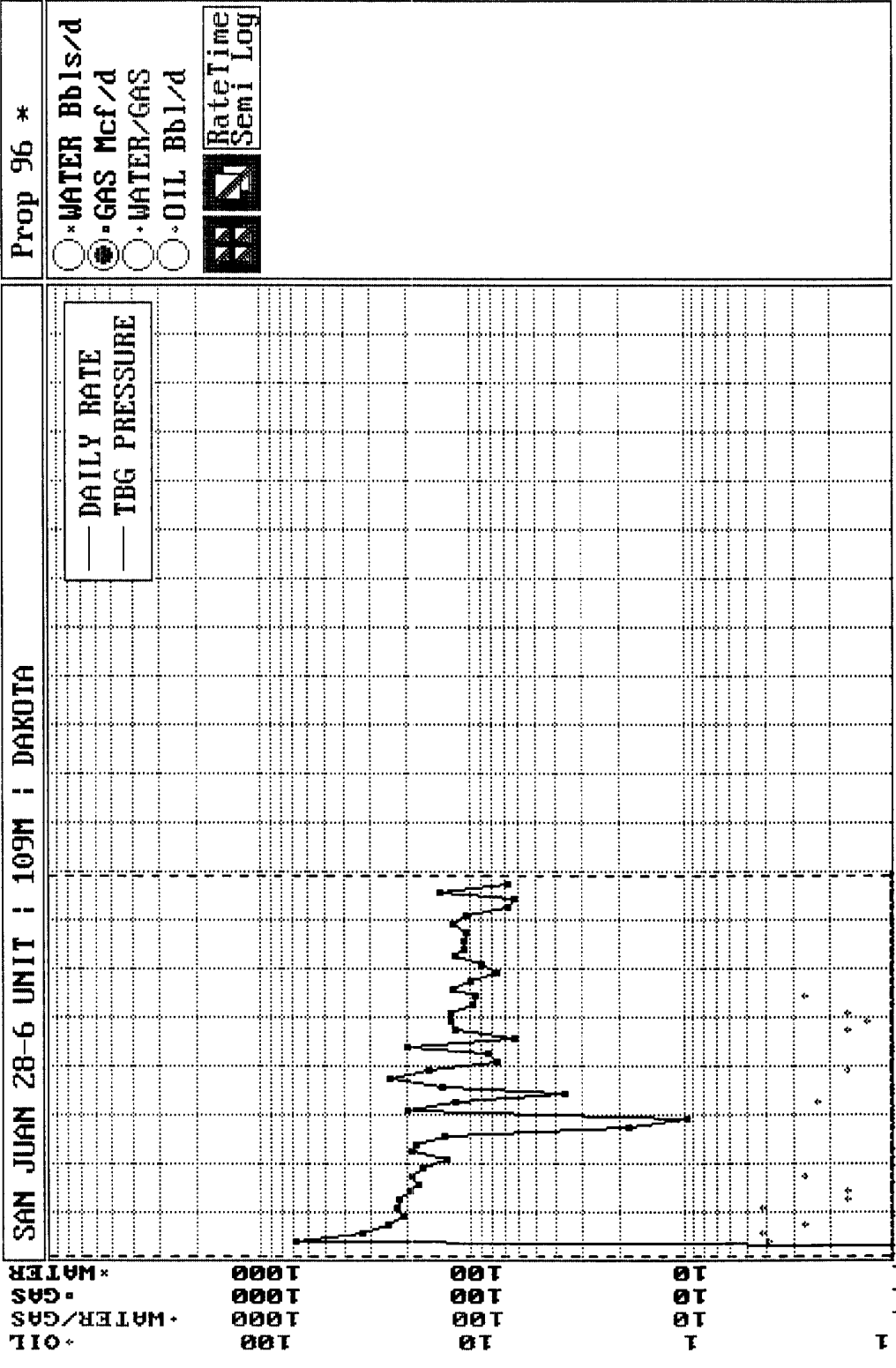
12 Dedicated Acres 320/320	13 Joint or Infill I	14 Consolidation Code	15 Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<div>16</div> <div>4 3 2 1</div> <div>RECEIVED JUN 20 1999 OIL CON. DIV. DIST. 3</div> <div>2574.00'</div> <div>1555'</div> <div>1850'</div> <div>5211.36'</div> <div>1327.92'</div> <div>1325.28'</div> <div>2650.56'</div> <div>2640.00'</div> <div>2648.58'</div>	<div>17 OPERATOR CERTIFICATE</div> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p>Signature Peggy Bradfield</p> <p>Printed Name Regulatory Representative</p> <p>Title</p> <p>Date</p>
	<div>18 SURVEYOR CERTIFICATE</div> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>5-18-94</p> <p>Date of Survey</p> <p>Signature and Seal of Professional Surveyor</p> <p>6857</p> <p>Certificate Number</p>



Major = GAS



Major = GAS

San Juan 28-6 Unit #109M
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	<u>0.672</u>	GAS GRAVITY	<u>0.633</u>
COND. OR MISC. (C/M)	<u>C</u>	COND. OR MISC. (C/M)	<u>C</u>
%N2	<u>0.31</u>	%N2	<u>0.30</u>
%CO2	<u>0.92</u>	%CO2	<u>1.84</u>
%H2S	<u>0</u>	%H2S	<u>0</u>
DIAMETER (IN)	<u>7</u>	DIAMETER (IN)	<u>2.375</u>
DEPTH (FT)	<u>5370</u>	DEPTH (FT)	<u>7573</u>
SURFACE TEMPERATURE (DEG F)	<u>60</u>	SURFACE TEMPERATURE (DEG F)	<u>60</u>
BOTTOMHOLE TEMPERATURE (DEG F)	<u>152</u>	BOTTOMHOLE TEMPERATURE (DEG F)	<u>182</u>
FLOWRATE (MCFPD)	<u>0</u>	FLOWRATE (MCFPD)	<u>0</u>
SURFACE PRESSURE (PSIA)	<u>634</u>	SURFACE PRESSURE (PSIA)	<u>739</u>
BOTTOMHOLE PRESSURE (PSIA)	<u>724.0</u>	BOTTOMHOLE PRESSURE (PSIA)	<u>877.1</u>
<u>MV-Original</u>		<u>DK-Original</u>	
GAS GRAVITY	<u>0.672</u>	GAS GRAVITY	<u>0.633</u>
COND. OR MISC. (C/M)	<u>C</u>	COND. OR MISC. (C/M)	<u>C</u>
%N2	<u>0.31</u>	%N2	<u>0.30</u>
%CO2	<u>0.92</u>	%CO2	<u>1.84</u>
%H2S	<u>0</u>	%H2S	<u>0</u>
DIAMETER (IN)	<u>7</u>	DIAMETER (IN)	<u>2.375</u>
DEPTH (FT)	<u>5370</u>	DEPTH (FT)	<u>7573</u>
SURFACE TEMPERATURE (DEG F)	<u>60</u>	SURFACE TEMPERATURE (DEG F)	<u>60</u>
BOTTOMHOLE TEMPERATURE (DEG F)	<u>152</u>	BOTTOMHOLE TEMPERATURE (DEG F)	<u>182</u>
FLOWRATE (MCFPD)	<u>0</u>	FLOWRATE (MCFPD)	<u>0</u>
SURFACE PRESSURE (PSIA)	<u>858</u>	SURFACE PRESSURE (PSIA)	<u>1839</u>
BOTTOMHOLE PRESSURE (PSIA)	<u>984.3</u>	BOTTOMHOLE PRESSURE (PSIA)	<u>2220.7</u>

Page No.: 1
Print Time: Thu Jan 07 16:30:54 1999
Property ID: 78
Property Name: SAN JUAN 28-6 UNIT | 109M | MESAVERDE
Table Name: S:\TLOVELAN\ARIES\99PROJ\TEST.DBF

<u>--DATE--</u>	<u>--CUM OIL--</u> Bbl	<u>---CUM GAS--</u> Mcf	<u>M SIWHP</u> Psi	
02/28/95		0	835.0	
04/03/95		1553	858.0	Original SIWHP

Page No.: 1
 Print Time: Mon Jan 11 08:38:04 1999
 Property ID: 1925
 Property Name: SAN JUAN 28-6 UNIT | 78 | 53437B-1 **MESAVERDE**
 Table Name: Q:\PUBLIC\GENTITY\GDPNOS\TEST.DBF

--DATE--	--CUM OIL-- Bbl	---CUM GAS--- Mcf	M SIWHP Psi
03/07/58		0	1109.0
07/30/58		0	1108.0
12/14/58		47000	831.0
06/14/59		77000	824.0
06/14/60		149000	662.0
12/14/60		186000	611.0
06/13/61		209000	630.0
06/04/62		254000	650.0
05/06/63		299000	629.0
04/22/64		337000	632.0
05/03/65		379000	634.0
06/07/66		421000	624.0
05/25/67		456000	602.0
05/27/68		486000	578.0
07/28/70		550935	575.0
06/22/71		580418	528.0
06/07/72		607674	514.0
08/16/76		704226	423.0
05/02/78		765901	379.0
07/02/80		846702	422.0
06/04/82		887511	452.0
04/18/86		951052	462.0
07/29/91		1027559	582.0
07/30/91		1027559	570.0

MESAVERDE

← Current SIWHP used for the BHP
 calculation. This data point was
 selected based on the location of
 this well as an offset well and the
 current cumulative production of th
 San Juan 28-6 Unit #109M as of
 November 1, 1998, being 395,797 MCF

Page No.: 2

Print Time: Thu Jan 07 16:30:54 1999

Property ID: 96

Property Name: SAN JUAN 28-6 UNIT | 109M | DAKOTA

Table Name: S:\TLOVELAN\ARIES\99PROJ\TEST.DBF

<u>--DATE--</u>	<u>--CUM OIL--</u>	<u>---CUM GAS---</u>	<u>M SIWHP</u>
	Bbl	Mcf	Psi

02/28/95

0 1839.0 Original SIWHP

Page No.: 1

Print Time: Thu Jan 07 16:26:13 1999

Property ID: 1476

Property Name: SAN JUAN 27-5 UNIT | 59M | 53392A-1 **DAKOTA**

Table Name: Q:\PUBLIC\GENTITY\GDPNOS\TEST.DBF

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

08/06/81		0	1731.0
02/23/82		33568	1246.0
06/04/82		70941	974.0
09/19/83		174401	546.0
11/18/85		303914	739.0
07/07/88		411865	702.0
04/24/90		490129	460.0
06/23/93		599036	640.0

DAKOTA

← Current SIWHP used for BHP calculation
This pressure was selected based on the
location of this well as an offset well
and the current cumulative production
of the San Juan 28-6 Unit #109M as of
November 1, 1998, being 200,695 MCF.

FARMINGTON

1998 MONTHLY PRODUCTION FOR 33749A

PHS030M1

SAN JUAN 28-6 UNIT 109M

BLANCO MESAVERDE (PRORATED GAS FIELD

MESAVERDE ZONE

DAYS =====					OIL =====		=====		GAS =====						
MO	T	S	ON	PC	PROD	GRV	PC	PROD	ON	BTU	PRESS	WATER	PROD	C	
1	2	F	31	02	5		01	8995	31	1159	15.025				
2	2	F	28	02	10		01	7165	28	1159	15.025				
3	2	F	31	02	15		01	7187	31	1159	15.025				
4	2	F	30	02	15		01	6819	30	1148	15.025				
5	2	F	31	02			01	7162	31	1148	15.025				
6	2	F	29	02	27		01	6120	29	1148	15.025				
7	2	F	31	02	7		01	6492	31	1148	15.025				
8	2	F	31	02	7		01	7939	31	1148	15.025				
9	2	F	30	02	5		01	4073	30	1148	15.025				
10	2	F	31	02	3		01	9620	31	1148	15.025				
11	2	F			0		01	4399	30	1148	15.025				
12															

Obopd

$4399 \div 30 = 146.6 \text{ mcf/d}$

PF6 - RETURNS TO ANNUAL DISPLAY
 PF10 - HELP INFORMATION

PF3 - TRANSFER TO UPDATE
 PF9 - DISPLAY MONTHLY INJECTION
 PRS 01/06/99

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

FARMINGTON 1998 MONTHLY PRODUCTION FOR 33799A
 SAN JUAN 28-6 UNIT 109M
 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	3		01	2759	31	1044	15.025			
2	2	F	28	02			01	3670	28	1044	15.025			
3	2	F	31	02			01	3316	31	1044	15.025			
4	2	F	30	02			01	3277	30	1082	15.025			
5	2	F	31	02			01	3214	31	1082	15.025			
6	2	F	29	02			01	3679	29	1082	15.025			
7	2	F	31	02	2		01	3193	31	1082	15.025			
8	2	F	31	02			01	2078	31	1082	15.025			
9	2	F	30	02	3		01	1900	30	1082	15.025			
10	2	F	31	02	3		01	4254	31	1082	15.025			
11	2	F			0		01	2060	30	1082	15.025			
12														

0 b b p d
 $2060 \div 30 = 68.7 \text{ mcf/d}$

PF6 - RETURNS TO ANNUAL DISPLAY
 PF10 - HELP INFORMATION

PF3 - TRANSFER TO UPDATE
 PF9 - DISPLAY MONTHLY INJECTION
 PRS 01/06/99

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

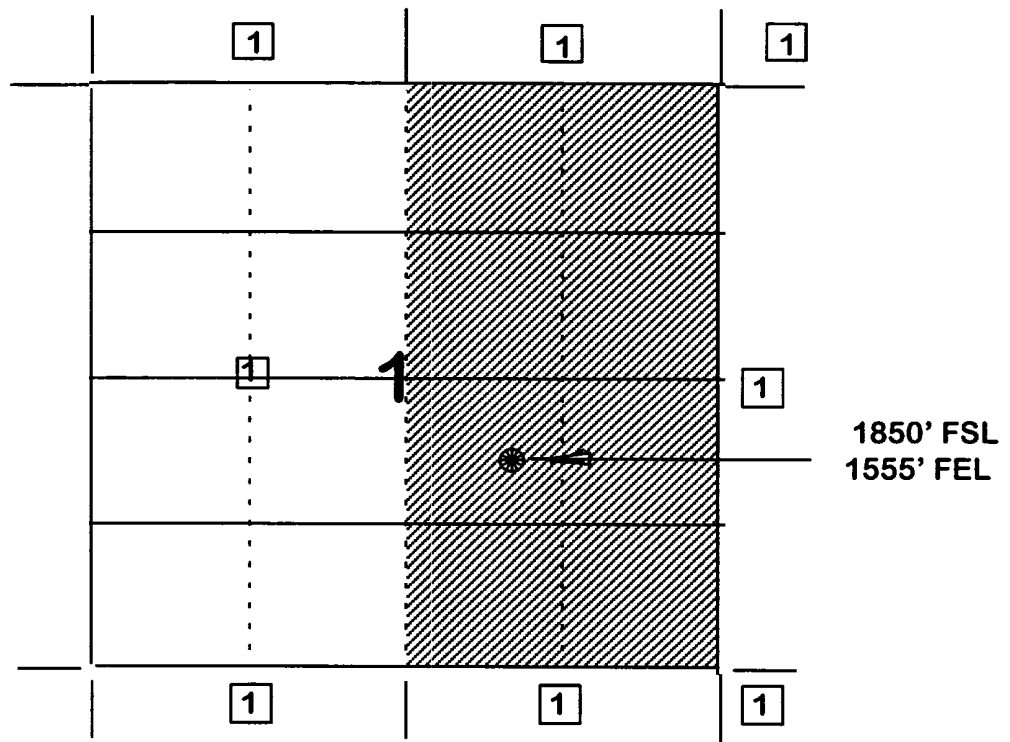
BURLINGTON RESOURCES OIL AND GAS COMPANY

**OFFSET OPERATOR \ OWNER PLAT
San Juan 28-6 Unit #109M**

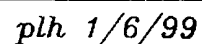
Mesaverde/Dakota Formations

Commingled well

Township 27 North, Range 6 West



1) Burlington Resources



SJ 28-6 Unit 109M
Sec. 1, T 27N, R6W
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. 11628
ORDER NO. R-10696

APPLICATION OF BURLINGTON RESOURCES
OIL & GAS COMPANY FOR THE ESTABLISHMENT
OF A DOWNHOLE COMMINGLING "REFERENCE
CASE" FOR ITS SAN JUAN 28-6 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 28-6 Unit, San Juan County, New Mexico.

(3) Division Rule No. 303.E.. amended by Order No. R-10470-A, currently states:

- 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 28-6 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 28-6 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 28-6 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 449 MMCFG and 186 MMCFG, respectively;
- c) the average initial producing rate for a newly drilled or recompleted Dakota and Pictured Cliffs gas well is approximately 254 MCFGD and 216 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 28-6 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 28-6 Unit, the applicant presented engineering evidence and testimony which indicates that:

- c) providing notice to each interest owner within the San Juan 28-6 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 28-6 Unit Area will benefit working, royalty, and overriding royalty interest owners. In addition, the downhole commingling of wells within the San Juan 28-6 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 28-6 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 28-6 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 28-6 Unit, San Juan County, New Mexico, is hereby approved.
