

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

DISTRICT II
811 South First St., Artesia, NM 88210-2836

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 :

☒ 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 #45-A Address
F-20-29N-07W County
Rio Arriba
Lease Well No. Unit Ltr. - Sec - Twp - Rge Spacing Unit Lease Types: (check 1 or more)
OGRID NO. 14538 Property Code 7465 API NO. 30-039-23955 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)	5267'-6193'		7895'-8095'
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. 242 psi (see attachment) (Original) b. 912 psi (see attachment)		a. 596 psi (see attachment) b. 2282 psi (see attachment)
6. Oil Gravity (°API) or Gas BTU Content	BTU 1186		BTU 1027
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 water of recent test (within 60 days)	Date: 2/98 Rates: 343 mcfd 0.0 bopd		Date: 2/98 Rates: 113 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 ☒ 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). 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 03-02-98

TYPE OR PRINT NAME L. Tom Loveland TELEPHONE NO. (505) 326-9700

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-12
Effective 1-1-65

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

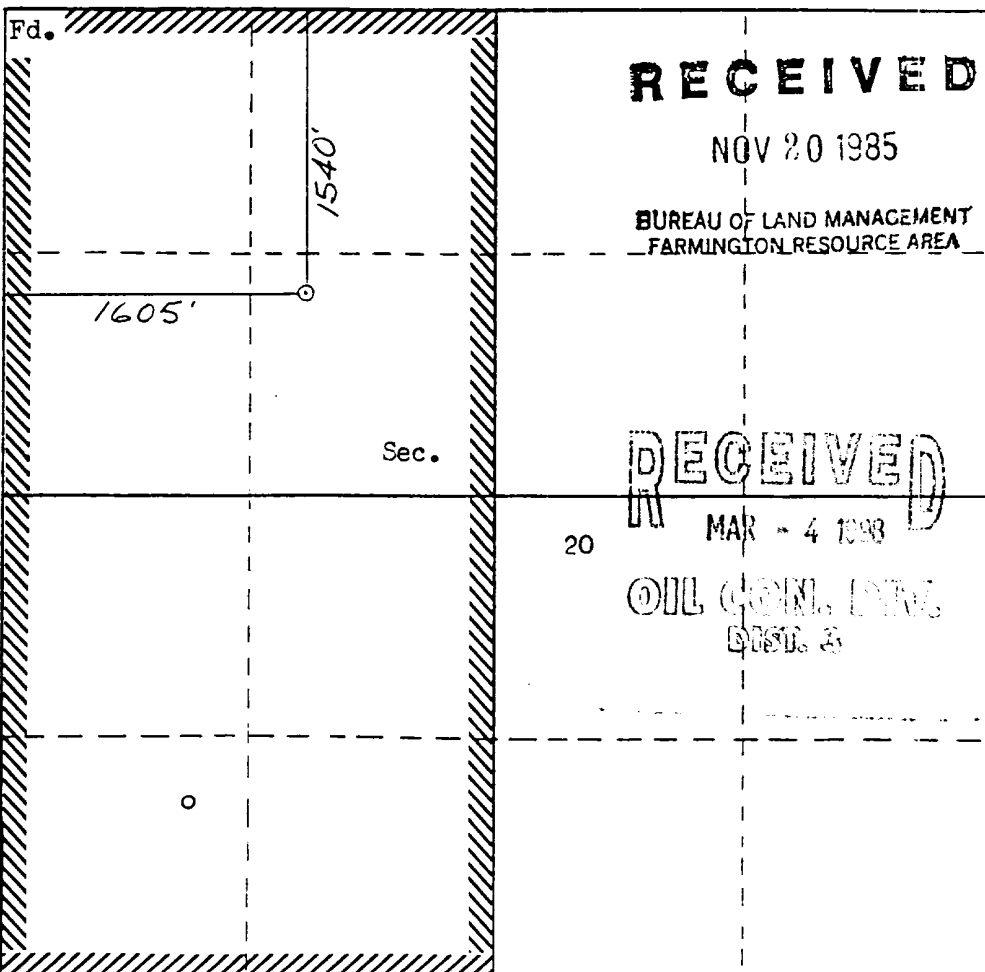
Operator EL PASO NATURAL GAS COMPANY			Lease SAN JUAN 29-7 UNIT (SF 078424)		Well No. 45A
Unit Letter F	Section 20	Township 29N	Range 7W	County Rio Arriba	
Actual Footage Location of Well: 1540 feet from the North line and 1605 feet from the West line					
Ground Level Elev. 6901	Producing Formation Mesa Verde/Dakota		Pool Blanco/Basin		Dedicated Acreage 320/320 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.



• Scale: 1"=1000'

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

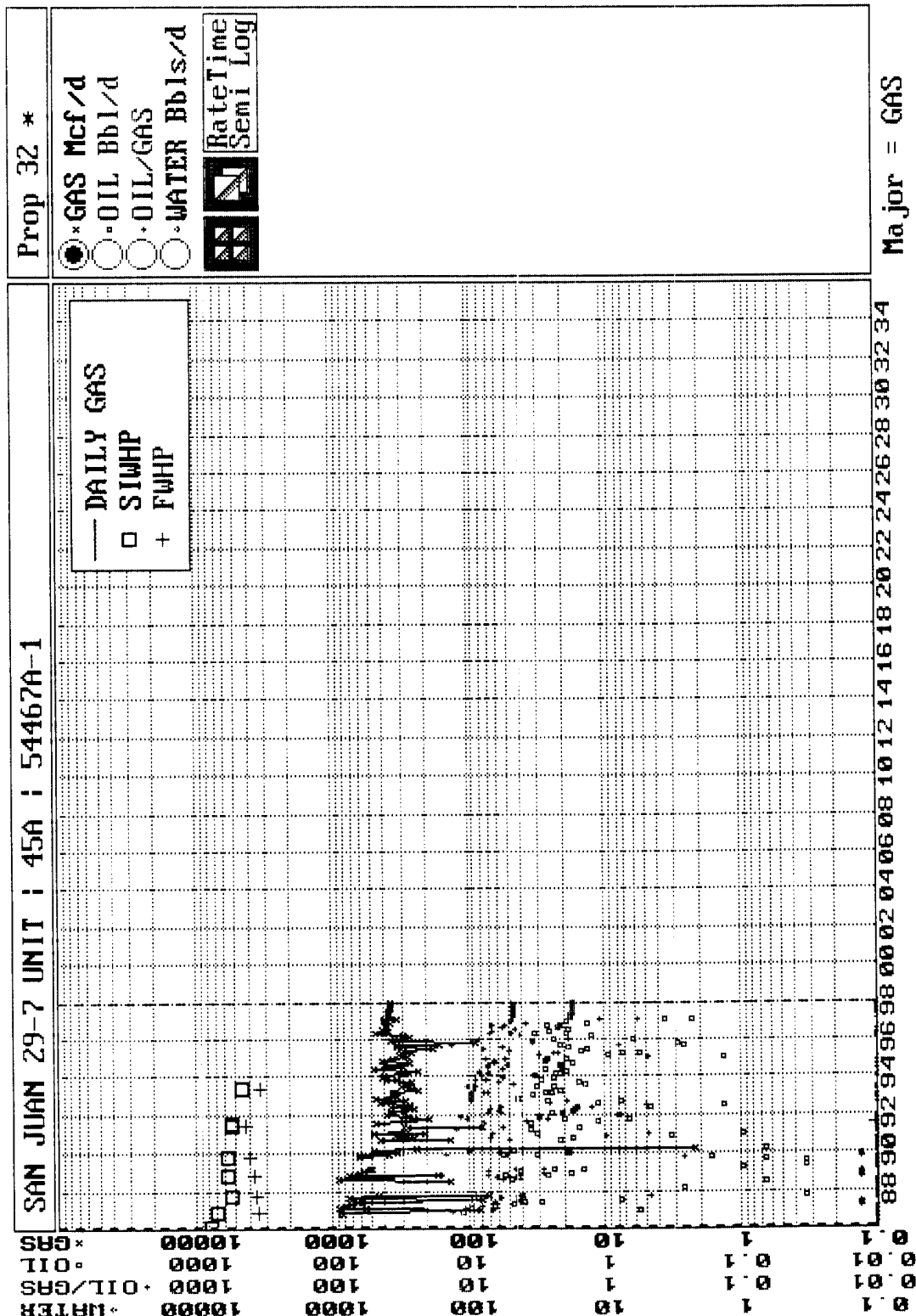
Date

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.

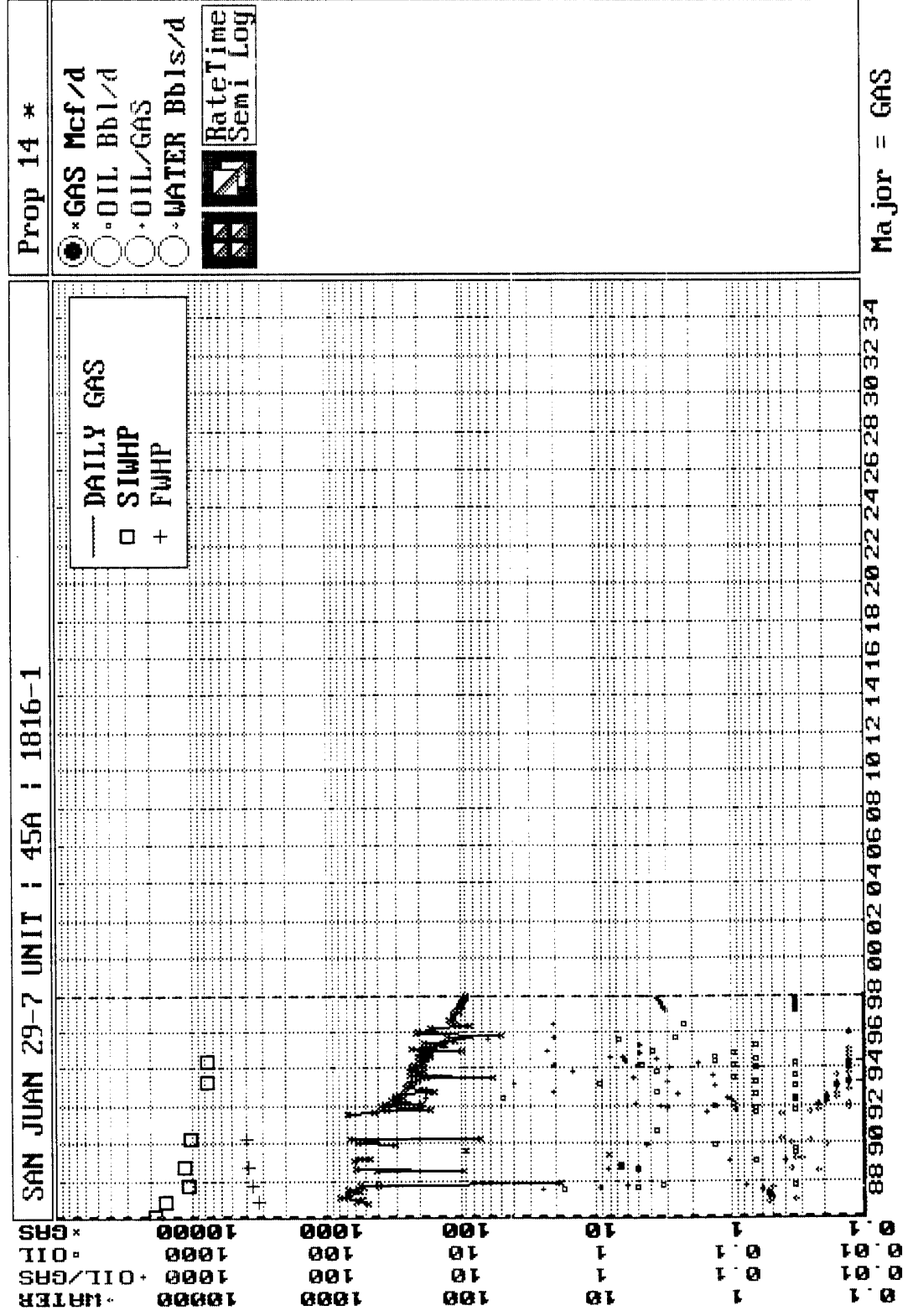
Date Surveyed **9-23-85**

William E. Mahnke II
Registered Professional Engineer
and Land Surveyor **(466)**

Certificate No. **PROFESSIONAL LAND SURVEYOR 8466**



Di



San Juan 29-7 Unit #45A
Bottom Hole Pressures
Flowing and Static BHP
Cullender and Smith Method

Version 1.0 1/8/98

Mesaverde		Dakota	
<u>MV-Current</u>		<u>DK-Current</u>	
GAS GRAVITY	0.709	GAS GRAVITY	0.639
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.24	%N2	0.20
%CO2	0.93	%CO2	1.36
%H2S	0	%H2S	0
DIAMETER (IN)	7	DIAMETER (IN)	2.375
DEPTH (FT)	5730	DEPTH (FT)	7995
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	152	BOTTOMHOLE TEMPERATURE (DEG F)	188
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	210	SURFACE PRESSURE (PSIA)	500
BOTTOMHOLE PRESSURE (PSIA)	241.5	BOTTOMHOLE PRESSURE (PSIA)	596.4
<u>MV-Original</u>		<u>DK-Original</u>	
GAS GRAVITY	0.709	GAS GRAVITY	0.639
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.24	%N2	0.20
%CO2	0.93	%CO2	1.36
%H2S	0	%H2S	0
DIAMETER (IN)	7	DIAMETER (IN)	2.375
DEPTH (FT)	5730	DEPTH (FT)	7995
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	152	BOTTOMHOLE TEMPERATURE (DEG F)	188
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	781	SURFACE PRESSURE (PSIA)	1867
BOTTOMHOLE PRESSURE (PSIA)	911.9	BOTTOMHOLE PRESSURE (PSIA)	2282.3

Page No.: 7
 Print Time: Tue Jan 06 06:48:41 1998
 Property ID: 32
 Property Name: SAN JUAN 29-7 UNIT | 45A | 54467A-1
 Table Name: S:\ARIES\RSCOM98\TEST.DBF

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

02/26/86		0	781.0 <i>original</i>
11/28/86		28754	691.0
10/11/87		201211	543.0
10/10/88		259266	590.0
11/07/89		380642	589.0
06/20/91		515964	549.0
07/24/91		552790	537.0
06/01/93		759289	450.0
12/1/97		1309024	210.0 <i>Current estimated from 7/2 data</i>

OK

Page No.: 3
Print Time: Tue Jan 06 06:48:40 1998
Property ID: 14
Property Name: SAN JUAN 29-7 UNIT | 45A | 1816-1
Table Name: S:\ARIES\RSCOM98\TEST.DBF

<u>--DATE--</u>	<u>--CUM OIL--</u> Bbl	<u>---CUM GAS---</u> Mcf	<u>M SIWHP</u> Psi
02/19/86		0	1867.0
11/28/86		31741	1556.0
10/11/87		237652	1079.0
09/04/88		272065	1150.0
04/08/90		386863	1033.0
04/16/93		581933	787.0
05/31/94		657937	768.0
12/1 /97		834591	500.0

original
Current estimated from P/z data

Package Preparation Volume Data

DPNo: 54467A

SAN JUAN 29-7 UNIT

48A

Form: MV

Supt: 60 KEN RAYBON

FF: 335 LARY BYARS

MS: 318 J.R TRUJILLO

Pipeline: EPNG

Plunger: No

Dual: Yes

Compressor: No

Ownership (No Trust)			Prior Year			Current Year		
	Gas	Oil			Days			Days
				MCF/M	BOPM	On	MCF/M	BOPM
	GWI: 62.5191%	62.5191%	Jan	10,549	19.0	31	12,444	7.0
	GNI: 52.8043%	52.8043%	Feb	8,195	0.0	29	10,166	11.0
			Mar	9,121	38.0	31	9,594	12.0
<u>Volumes</u>			Apr	14,318	98.0	30	10,709	37.0
<u>(Days On)</u>	<u>MCFD</u>	<u>BOPD</u>	May	12,616	59.0	26	10,031	57.0
7 Day Avg	332	0.0	Jun	11,667	77.0	26	8,422	44.0
30 Day Avg	343	0.0	Jul	12,917	57.0	31	12,567	31.0
60 Day Avg	338	0.5	Aug	12,294	68.0	31	11,721	20.0
3 Mo Avg	340	1.1	Sept	12,033	79.0	30	10,655	90.0
6 Mo Avg	360	1.3	Oct	11,988	64.0	31	11,563	52.0
12 MoAvg	357	1.1	Nov	11,118	41.0	30	9,416	18.0
			Dec	12,386	58.0	31	10,297	28.0
<u>Volumes</u>			Total	139,202	658.0		127,585	407.0
<u>(Days in Month)</u>	<u>MCFD</u>	<u>BOPD</u>						
30 Day Avg	343	0.0						
60 Day Avg	338	0.5						
3 Mo Avg	340	1.1						
6 Mo Avg	363	1.3						
12 Mo Avg	350	1.1						

Print Form

Exit Volumes Data

2/12/98

Package Preparation Volume Data

DPNo: 1818 SAN JUAN 29-7 UNIT 45A Form: DK

Supt: 60 KEN RAYBON FF: 335 LARY BYARS MS: 318 J.R. TRUJILLO
 Pipeline: EPNG Plunger: No Dual: Yes Compressor: No

<u>Ownership (No Trust)</u>			<u>Prior Year</u>			<u>Current Year</u>		
	<u>Gas</u>	<u>Oil</u>			<u>Days</u>			<u>Days</u>
				<u>MCF/M</u>	<u>BOPM</u>	<u>On</u>	<u>MCF/M</u>	<u>BOPM</u>
								<u>On</u>
GWI:	60.2270%	60.2270%	Jan	6,471	0.0	31	3,372	0.0
GNI:	49.8477%	49.8477%	Feb	4,734	0.0	29	3,068	0.0
			Mar	5,126	0.0	31	3,663	0.0
<u>Volumes</u>			Apr	2,610	0.0	30	3,702	0.0
<u>(Days On)</u>	<u>MCFD</u>	<u>BOPD</u>	May	3,205	0.0	28	3,999	2.0
7 Day Avg	118	0.0	Jun	3,371	7.0	26	3,607	0.0
30 Day Avg	113	0.0	Jul	3,518	0.0	31	4,226	0.0
60 Day Avg	120	0.0	Aug	3,684	0.0	31	4,046	0.0
3 Mo Avg	134	0.0	Sept	3,496	0.0	30	3,849	0.0
6 Mo Avg	133	0.0	Oct	3,491	0.0	31	4,154	0.0
12 MoAvg	127	0.0	Nov	3,405	0.0	30	4,229	0.0
			Dec	3,491	0.0	31	3,927	0.0
<u>Volumes</u>			Total	46,602	7.0		45,842	2.0
<u>(Days in Month)</u>	<u>MCFD</u>	<u>BOPD</u>						
30 Day Avg	113	0.0						
60 Day Avg	120	0.0						
3 Mo Avg	134	0.0						
6 Mo Avg	134	0.0						
12 Mo Avg	126	0.0						

Print Form

Exit Volumes Data

2/12/98

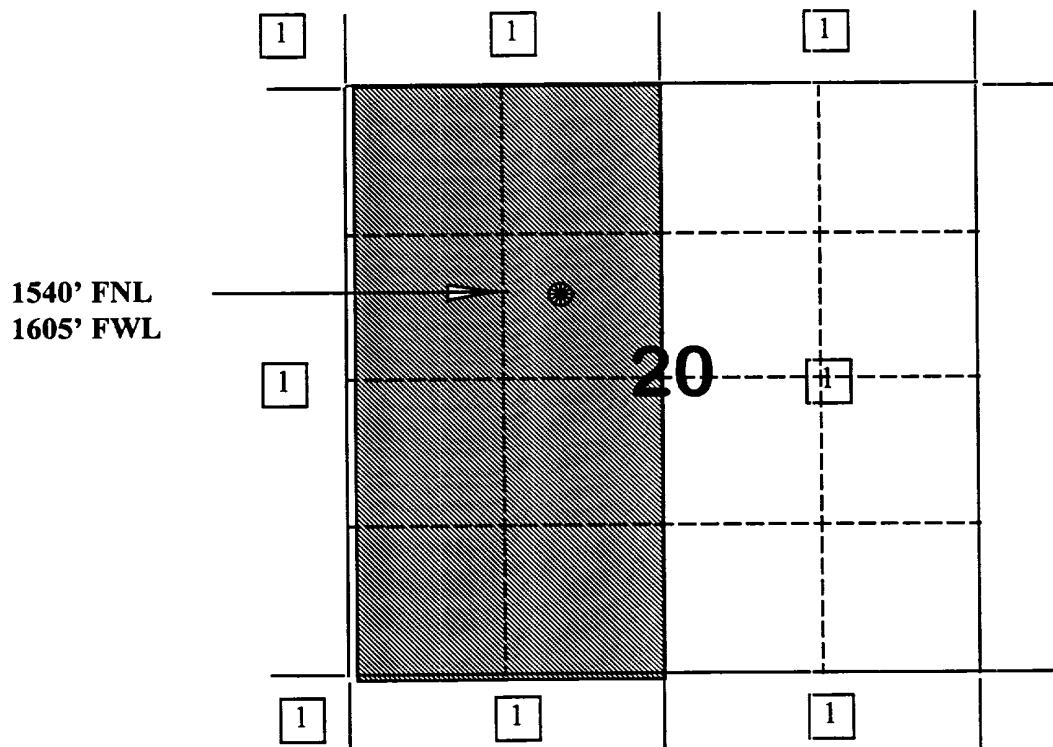
BURLINGTON RESOURCES OIL AND GAS COMPANY

San Juan 29-7 Unit #45A

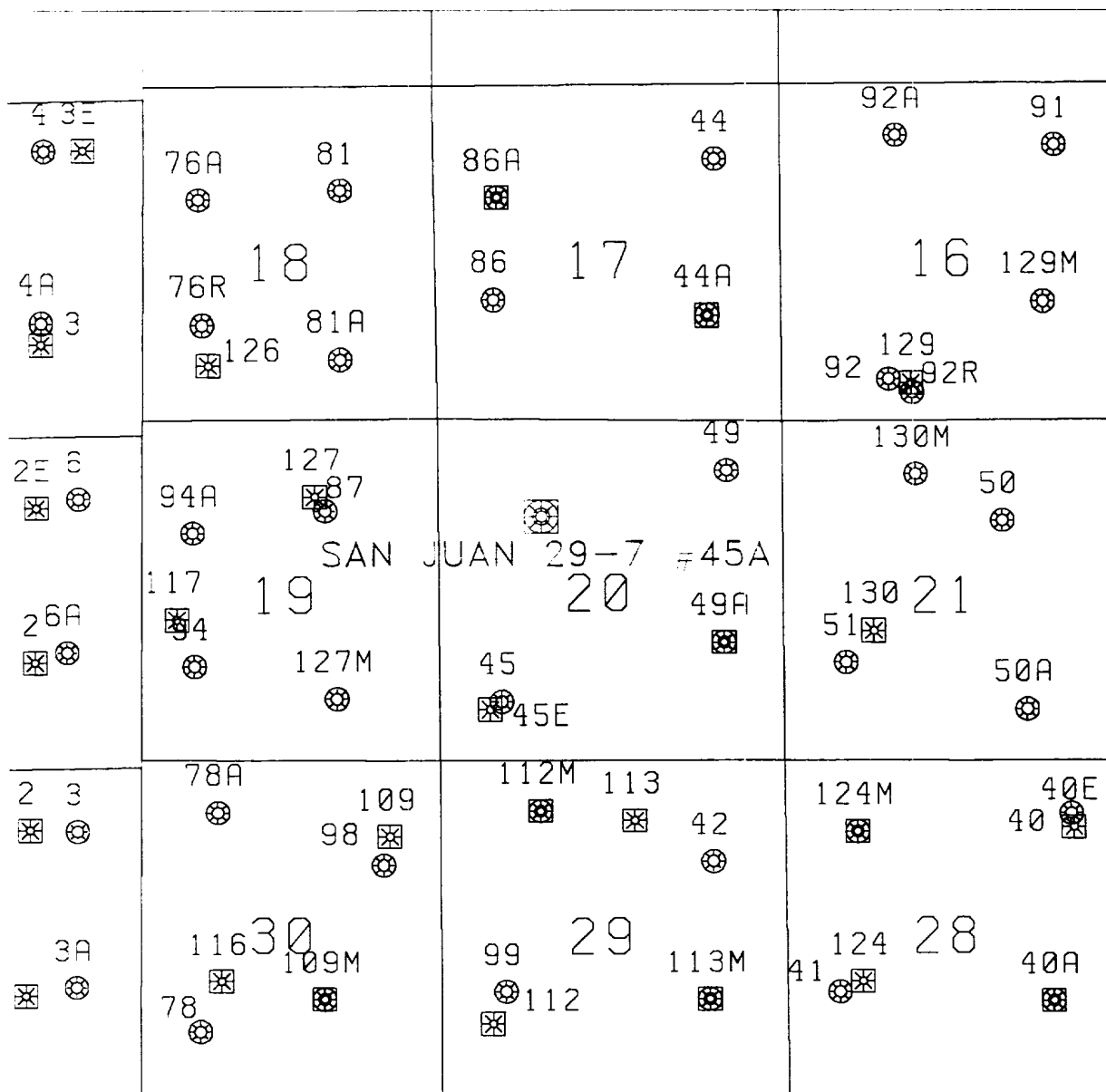
OFFSET OPERATOR/OWNER PLAT

Mesaverde / Dakota Formations Commingle Well

Township 29 North, Range 7 West



1) Burlington Resources



PLH 12/10/97

SAN JUAN 29-7 #45A
SEC. 20 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.

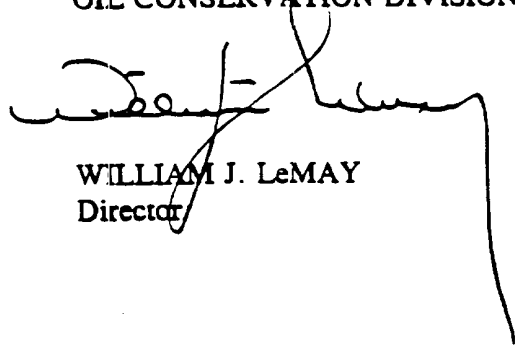
(3) In order to obtain Division authorization to downhole commingle wells within the San Juan 29-7 Unit, the applicant shall file a Form C-107-A with the Santa Fe and Aztec Offices of the Division. Such application shall contain all the information required under Rule No. 303.C. of the Division Rules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