

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 :
☒ Administrative
☐ Hearing
EXISTING WELLBORE
☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Burlington Resources Oil and Gas

Operator
San Juan 27-5 Unit #52 Address
M-04-27N-05W Rio Arriba
Lease Well No. Unit Ltr. - Sec - Twp - Rge County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 14538 Property Code 7454 API NO. 30-039- 07155 Federal ☒ , State , Fee

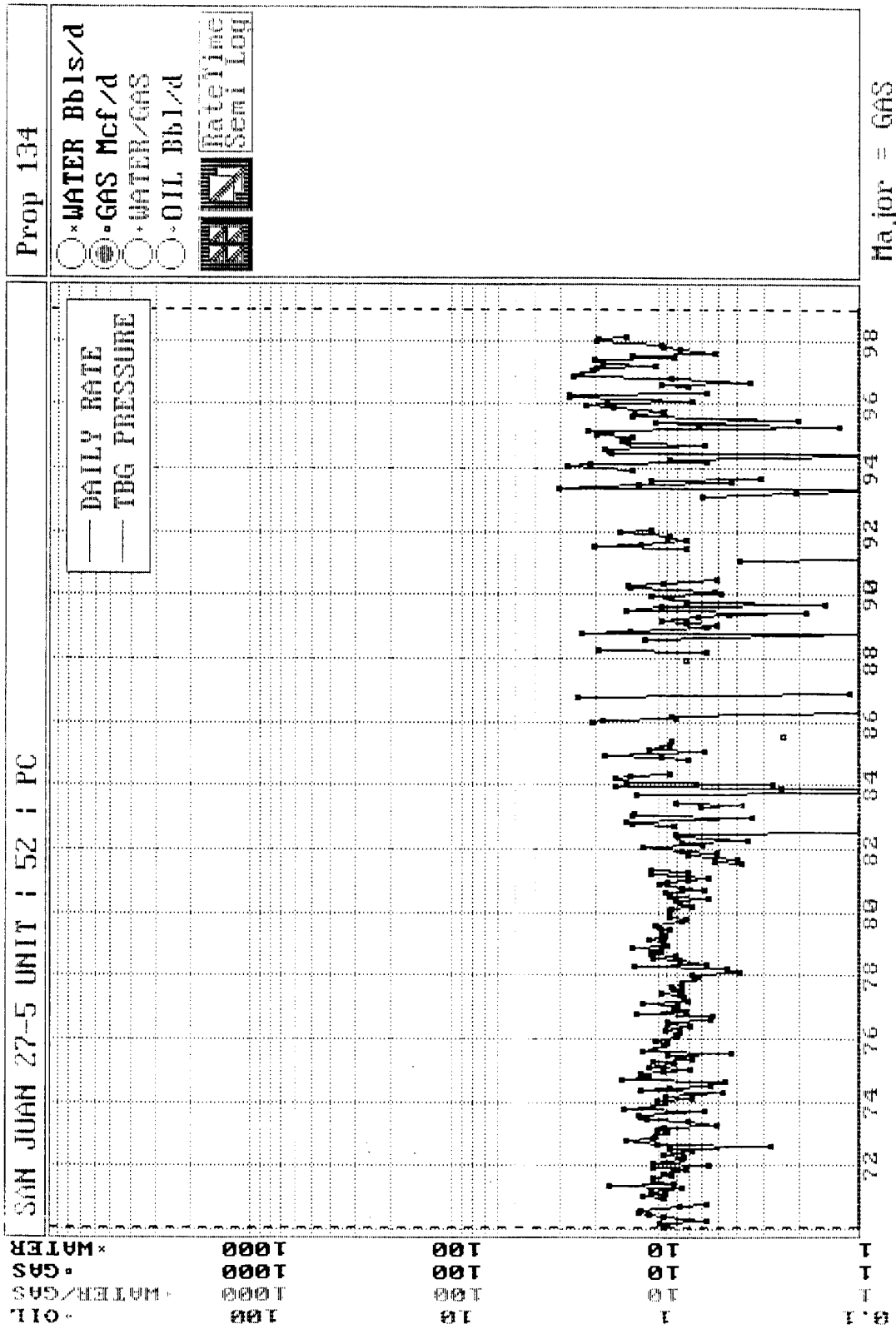
The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Tapacito Pictured Cliffs-85920		Blanco Mesaverde - 72319
2. Top and Bottom of Pay Section (Perforations)	3464'-3510'		5220'-5722'
3. Type of production (Oil or Gas)	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 Original	(Current) a. 315 psi (see attachment) (Original) b. 1227psi (see attachment)		a. 476 psi (see attachment) b. 1294 psi (see attachment)
6. Oil Gravity (°API) or Gas BTU Content	BTU 1168		BTU 1198
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 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: 6/98 Rates: 7 mcf/d 0 bopd		Date: 6/98 Rates: 77 mcf/d 0.1 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.

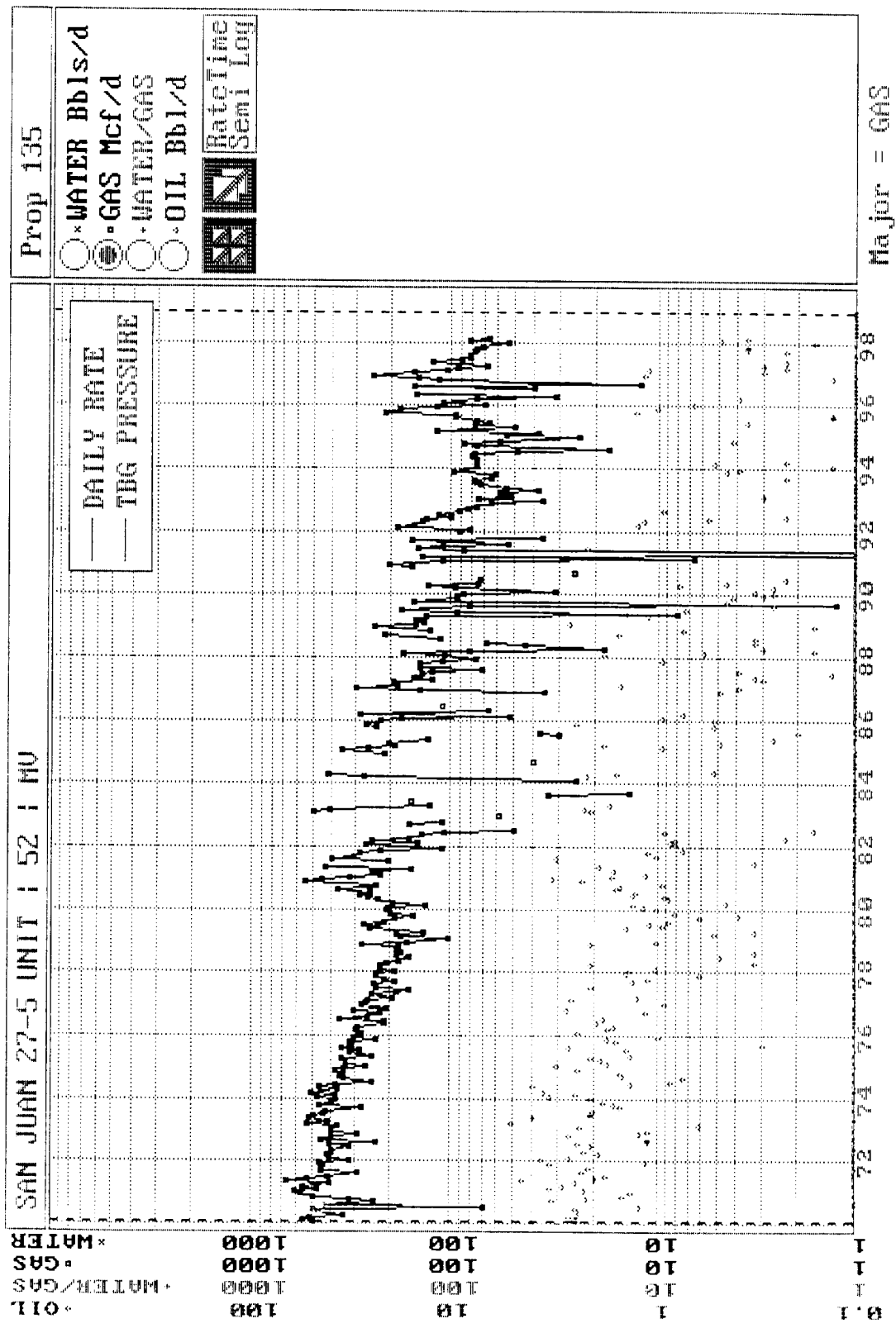
9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.
10. Are all working, overriding, and royalty interests identical 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. NMOC Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-10694
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 Y. Yom Loveland TITLE Production Engineer DATE 06-07-98

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





San Juan 27-5 Unit #52
Bottom Hole Pressures
Flowing and Static BHP
Cullender and Smith Method
Version 1.0 1/14/98

Pictured Cliffs		Mesa Verde	
<u>PC-Current</u>		<u>MV-Current</u>	
GAS GRAVITY	<u>0.67</u>	GAS GRAVITY	<u>0.691</u>
COND. OR MISC. (C/M)	<u>C</u>	COND. OR MISC. (C/M)	<u>C</u>
%N2	<u>0.66</u>	%N2	<u>0.21</u>
%CO2	<u>0.62</u>	%CO2	<u>1.03</u>
%H2S	<u>0</u>	%H2S	<u>0</u>
DIAMETER (IN)	<u>7.625</u>	DIAMETER (IN)	<u>2.375</u>
DEPTH (FT)	<u>3487</u>	DEPTH (FT)	<u>5471</u>
SURFACE TEMPERATURE (DEG F)	<u>60</u>	SURFACE TEMPERATURE (DEG F)	<u>60</u>
BOTTOMHOLE TEMPERATURE (DEG F)	<u>103</u>	BOTTOMHOLE TEMPERATURE (DEG F)	<u>149</u>
FLOWRATE (MCFPD)	<u>0</u>	FLOWRATE (MCFPD)	<u>0</u>
SURFACE PRESSURE (PSIA)	<u>289</u>	SURFACE PRESSURE (PSIA)	<u>416</u>
BOTTOMHOLE PRESSURE (PSIA)	<u>314.7</u>	BOTTOMHOLE PRESSURE (PSIA)	<u>476.1</u>
<u>PC-Original</u>		<u>MV-Original</u>	
GAS GRAVITY	<u>0.67</u>	GAS GRAVITY	<u>0.691</u>
COND. OR MISC. (C/M)	<u>C</u>	COND. OR MISC. (C/M)	<u>C</u>
%N2	<u>0.66</u>	%N2	<u>0.21</u>
%CO2	<u>0.62</u>	%CO2	<u>1.03</u>
%H2S	<u>0</u>	%H2S	<u>0</u>
DIAMETER (IN)	<u>7.625</u>	DIAMETER (IN)	<u>2.375</u>
DEPTH (FT)	<u>3487</u>	DEPTH (FT)	<u>5471</u>
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BOTTOMHOLE TEMPERATURE (DEG F)	<u>103</u>	BOTTOMHOLE TEMPERATURE (DEG F)	<u>149</u>
FLOWRATE (MCFPD)	<u>0</u>	FLOWRATE (MCFPD)	<u>0</u>
SURFACE PRESSURE (PSIA)	<u>1111</u>	SURFACE PRESSURE (PSIA)	<u>1112</u>
BOTTOMHOLE PRESSURE (PSIA)	<u>1226.7</u>	BOTTOMHOLE PRESSURE (PSIA)	<u>1294.1</u>

Page No.: 3
 Print Time: Tue May 12 13:48:36 1998
 Property ID: 199
 Property Name: SAN JUAN 27-5 UNIT | 52 | MESAVERDE
 Table Name: S:\ARIES\78LTL\TEST.DBF

--DATE--	--CUM_OIL-- Bbl	---CUM_GAS--- Mcf	M SIWHP Psi	
08/19/60		0	1112.0	Original
10/10/60		0	1111.0	
12/19/61		235000	840.0	
07/31/62		372000	791.0	
01/07/63		450000	772.0	
06/10/64		725000	719.0	
01/04/65		777000	693.0	
10/31/66		1120000	643.0	
05/26/67		1202000	649.0	
05/20/68		1328000	673.0	
05/23/69		1480015	595.0	
06/19/70		1665843	558.0	
04/27/71		1793061	518.0	
05/15/72		1965247	517.0	
07/05/73		2138273	469.0	
04/19/74		2249902	437.0	
06/25/76		2498563	476.0	
08/02/78		2677976	463.0	
06/04/80		2814358	513.0	
08/31/81		2939149	433.0	
05/31/82		2996762	460.0	
05/02/84		3071112	486.0	
04/17/86		3155781	474.0	
05/10/89		3273077	472.0	
07/30/91		3339509	480.0	
08/16/91		3341336	492.0	
06/01/93		3399478	447.0	
04/01/98		3547449	416.0	Current Estimated from P/z data

Page No.: 2

Print Time: Tue May 12 13:48:35 1998

Property ID: 198

Property Name: SAN JUAN 27-5 UNIT | 52 | PICTURED CLIFFS

Table Name: S:\ARIES\78LTL\TEST.DBF

--DATE--	--CUM_OIL-- Bbl	---CUM_GAS-- Mcf	M SIWHP Psi	
08/19/60		0	1111.0	Original
10/26/60		0	1110.0	
12/19/61		22000	786.0	
07/31/62		27000	633.0	
01/07/63		29000	627.0	
06/10/64		38000	558.0	
01/04/65		41000	571.0	
05/23/66		45000	548.0	
05/26/67		48000	528.0	
05/20/68		50000	546.0	
07/21/70		60996	450.0	
04/27/71		63294	411.0	
05/15/72		67075	397.0	
04/19/74		73562	337.0	
02/13/84		102420	347.0	
05/02/84		103608	346.0	
11/03/86		108618	387.0	
05/10/89		112314	382.0	
10/01/91		117439	427.0	
06/01/93		120104	423.0	
04/01/98		142223	289.0	Current estimated from P/z data

Package Preparation Volume Data

DPNo: 53383A SAN JUAN 27-5 UNIT 52 Form: PC

Supt: 60 KEN RAYBON FF: 335 LARY BYARS MS: 378 GARY NELSON
Pipeline: WFS Plunger: No Dual: Yes Compressor: No

Ownership (No Trust)			Prior Year			Current Year			
	Gas	Oil			Days			Days	
				MCF/M	BOPM	On	MCF/M	BOPM	On
GWl:	68.0078%	64.8149%	Jan	654	0.0	31	617	0.0	31
GNI:	57.2658%	54.8288%	Feb	631	0.0	28	453	0.0	28
			Mar	325	0.0	31	218	0.0	31
<u>Volumes</u>			Apr	585	0.0	30	0	0.0	30
<u>(Days On)</u>	<u>MCFD</u>	<u>BOPD</u>	May	645	0.0	31	0	0.0	0
7 Day Avg	0	0.0	Jun	263	0.0	30	0	0.0	0
30 Day Avg	7	0.0	Jul	415	0.0	31	0	0.0	0
60 Day Avg	7	0.0	Aug	164	0.0	31	0	0.0	0
3 Mo Avg	14	0.0	Sept	246	0.0	30	0	0.0	0
6 Mo Avg	14	0.0	Oct	294	0.0	25	0	0.0	0
12 MoAvg	13	0.0	Nov	300	0.0	30	0	0.0	0
			Dec	626	0.0	31	0	0.0	0
<u>Volumes</u>			Total	5,148	0.0		1,288	0.0	
<u>(Days in Month)</u>	<u>MCFD</u>	<u>BOPD</u>							
30 Day Avg	7	0.0							
60 Day Avg	7	0.0							
3 Mo Avg	14	0.0							
6 Mo Avg	14	0.0							
12 Mo Avg	13	0.0							

Print Form

Exit Volumes Data

Print Form

Exit Volumes Data

6/1/98

Package Preparation Volume Data

DPNo: 53383B

SAN JUAN 27-5 UNIT

52

Form: MV

Supt: 60 KEN RAYBON

FF: 335 LARY BYARS

MS: 378 GARY NELSON

Pipeline: WFS

Plunger: No

Dual: Yes

Compressor: No

Ownership (No Trust)			Prior Year			Current Year		
	Gas	Oil			Days			Days
				MCF/M	BOPM		MCF/M	BOPM
					On			On
GWl:	67.4570%	54.6688%	Jan	4,702	9.0	31	2,344	15.0
GNI:	56.8126%	54.6845%	Feb	3,241	34.0	28	1,987	11.0
			Mar	2,822	7.0	31	1,621	11.0
Volumes			Apr	2,003	9.0	30	0	0.0
(Days On)	MCFD	BOPD	May	3,835	7.0	31	0	0.0
7 Day Avg	0	0.0	Jun	2,736	0.0	30	0	0.0
30 Day Avg	77	0.1	Jul	2,431	0.0	31	0	0.0
60 Day Avg	64	0.2	Aug	2,480	1.0	31	0	0.0
3 Mo Avg	66	0.4	Sept	2,359	7.0	30	0	0.0
6 Mo Avg	67	0.4	Oct	2,284	11.0	27	0	0.0
12 MoAvg	77	0.2	Nov	2,112	11.0	30	0	0.0
			Dec	1,568	5.0	31	0	0.0
Volumes			Total	32,573	101.0		5,952	37.0
(Days in Month)	MCFD	BOPD						
30 Day Avg	77	0.1						
60 Day Avg	64	0.2						
3 Mo Avg	66	0.4						
6 Mo Avg	65	0.4						
12 Mo Avg	76	0.2						

Print Form

Exit Volumes Data

6/1/98

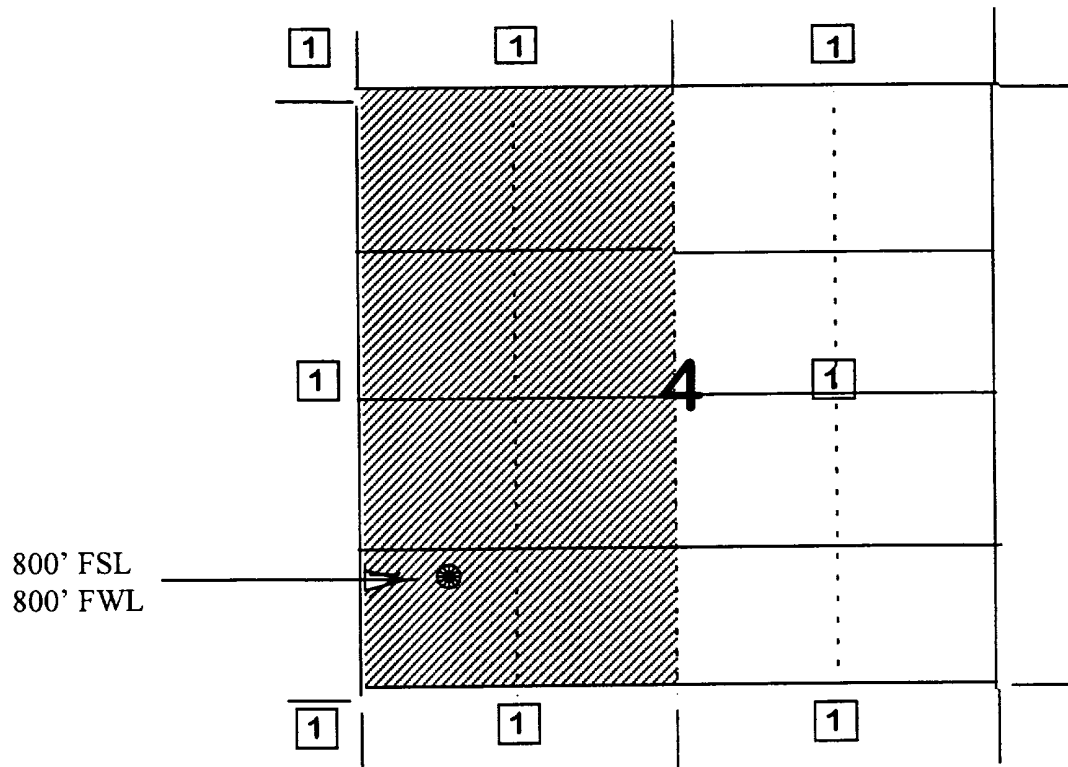
BURLINGTON RESOURCES OIL AND GAS COMPANY

San Juan 27-5 Unit #52

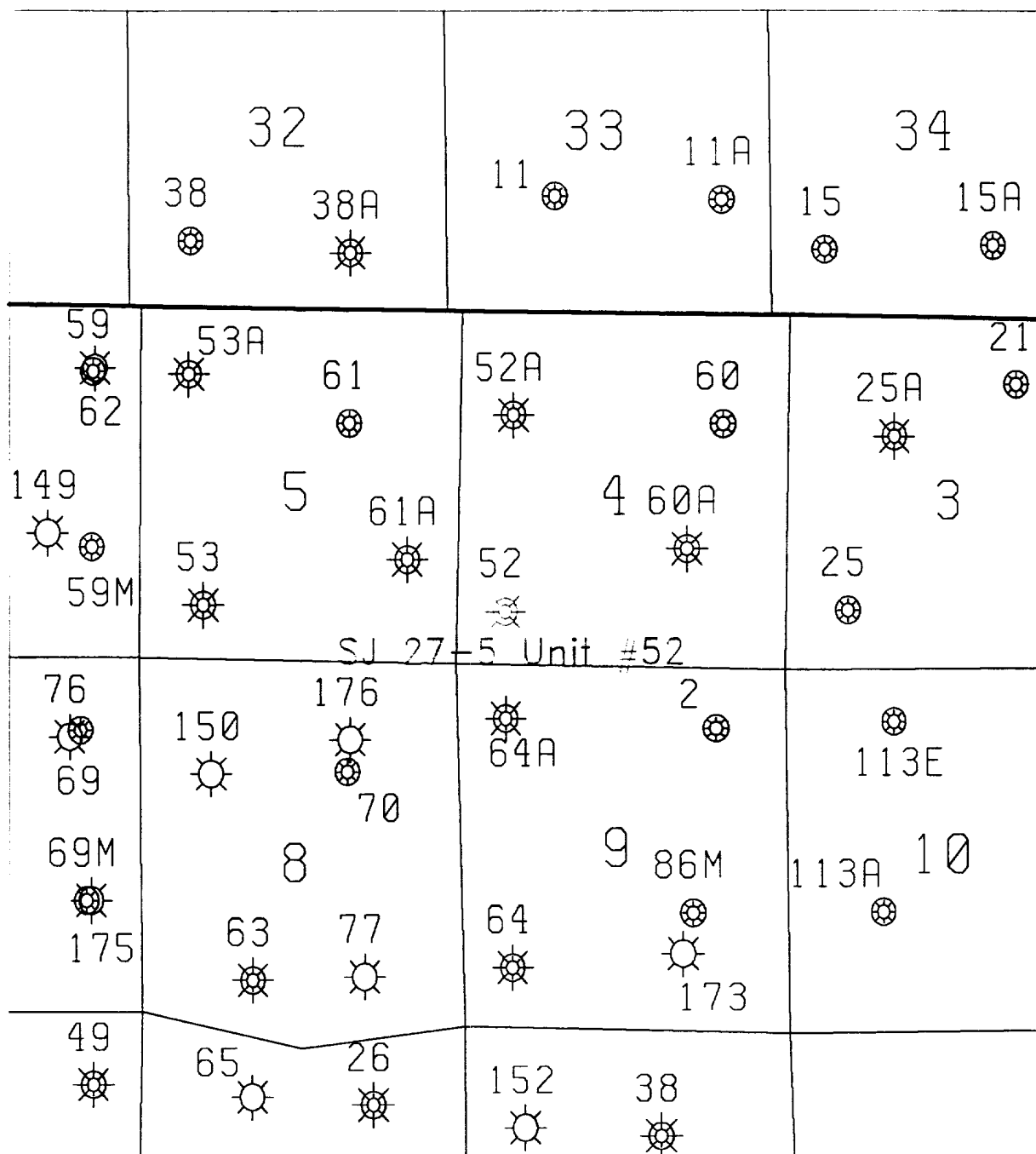
Offset Operator/Owner Plat

Pictured Cliffs / Mesaverde Formations Commingle Well

Township 27 North, Range 5 West



1) Burlington Resources



PLH 5/27/98

San Juan 27-5 Unit #52
Sec. 4, T27N, R5W
Pictured Cliffs/Mesaverde

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.

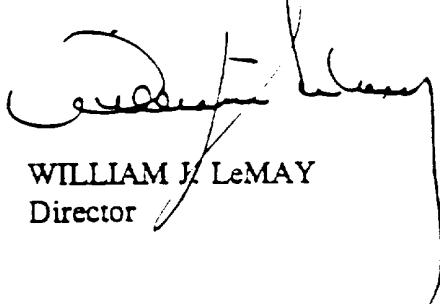
(2) Upon filing of Division Form No. C-107-A's for wells subsequently downhole commingled within the San Juan 27-5 Unit Area, the applicant shall not be required to submit supporting data to justify the classification of the Pictured Cliffs and Dakota formations as "marginal", supporting data to verify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