

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

EXISTING WELLBORE

☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Burlington Resources Oil and Gas

PO Box 4289, Farmington, NM 87499

Operator **San Juan 27-5 Unit** #60A Address **J-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. 30-039-21858 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 Pic Cliffs - 85920		Blanco Mesaverde - 72319
2. Top and Bottom of Pay Section (Perforations)	3430'-3494'		5107'-5980
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: All Gas Zones: Estimated Current Measured Current Estimated Original	(Current) a. 368 psi (see attachment) (Original) b. 1008 psi (see attachment)		a. 380 psi (see attachment) b. 1028 psi (see attachment)
6. Oil Gravity (°API) or Gas BTU Content	BTU 1158		BTU 1211
7. Producing or Shut-In?	Producing		Producing
Production Marginal? (yes or no)	Yes		No
* 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: 35 mcf/d 0 bopd		Date: 6/98 Rates: 168 mcf/d 1.1 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. NMOCD 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 L. Tom Loveland TITLE Production Engineer DATE 6/22/98

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

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

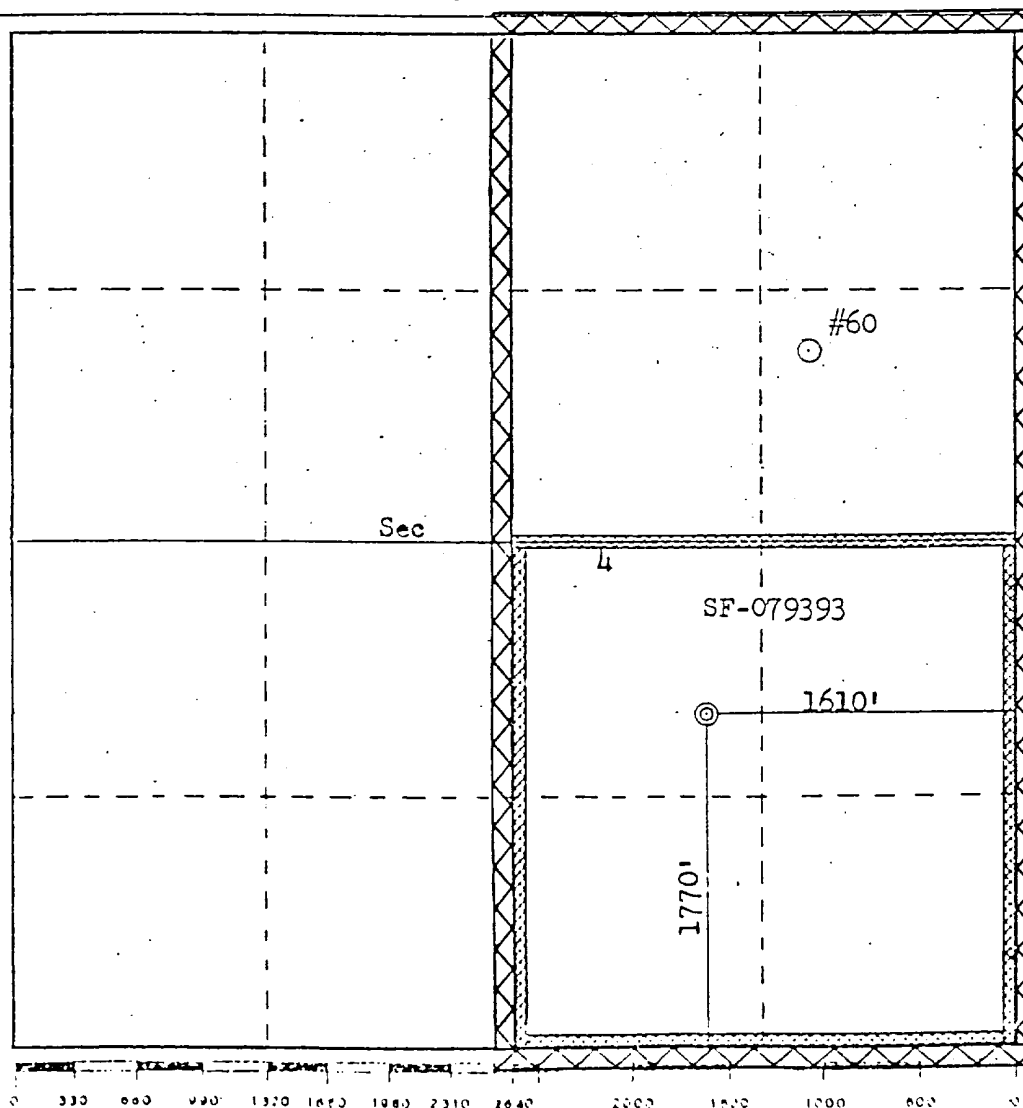
Operator EL PASO NATURAL GAS COMPANY		Lease SAN JUAN 27-5 UNIT (SF-079393)		Well No. 60A
Unit Letter J	Section 4	Township 27N	Range 5W	County Rio Arriba
Actual Footage Location of Well:				
1770	feet from the South	line and	1610	feet from the East
Ground Level Elev. 6585	Producing Formation Mesa Verde-Pictured Cliffs	Pool Blanco Mesa Verde	Dedicated Acreage 319.69 & 160.00	
		Tapacito Pictured Cliffs Ext.		

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. Note: Plat re-issued to show formation change from single to dual completion 8/27/79



CERTIFICATION

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

D. G. Busco

Name

Drilling Clerk

Position

El Paso Natural Gas Co.

Company

August 31, 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.

RECEIVED

SEP 4 1979

U.S. GEOLOGICAL SURVEY
JULY 23 1979

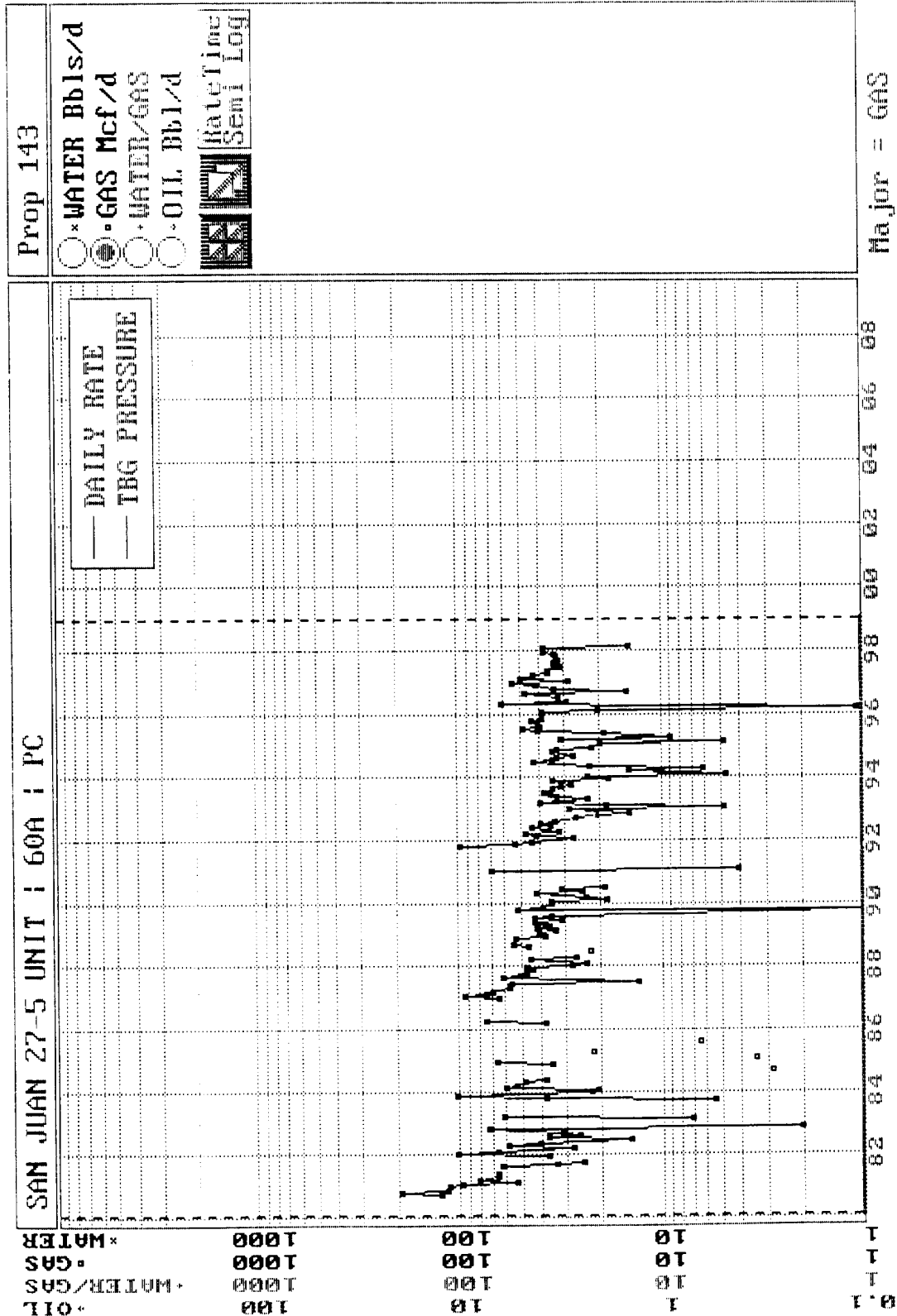
For information of the Bureau and the State

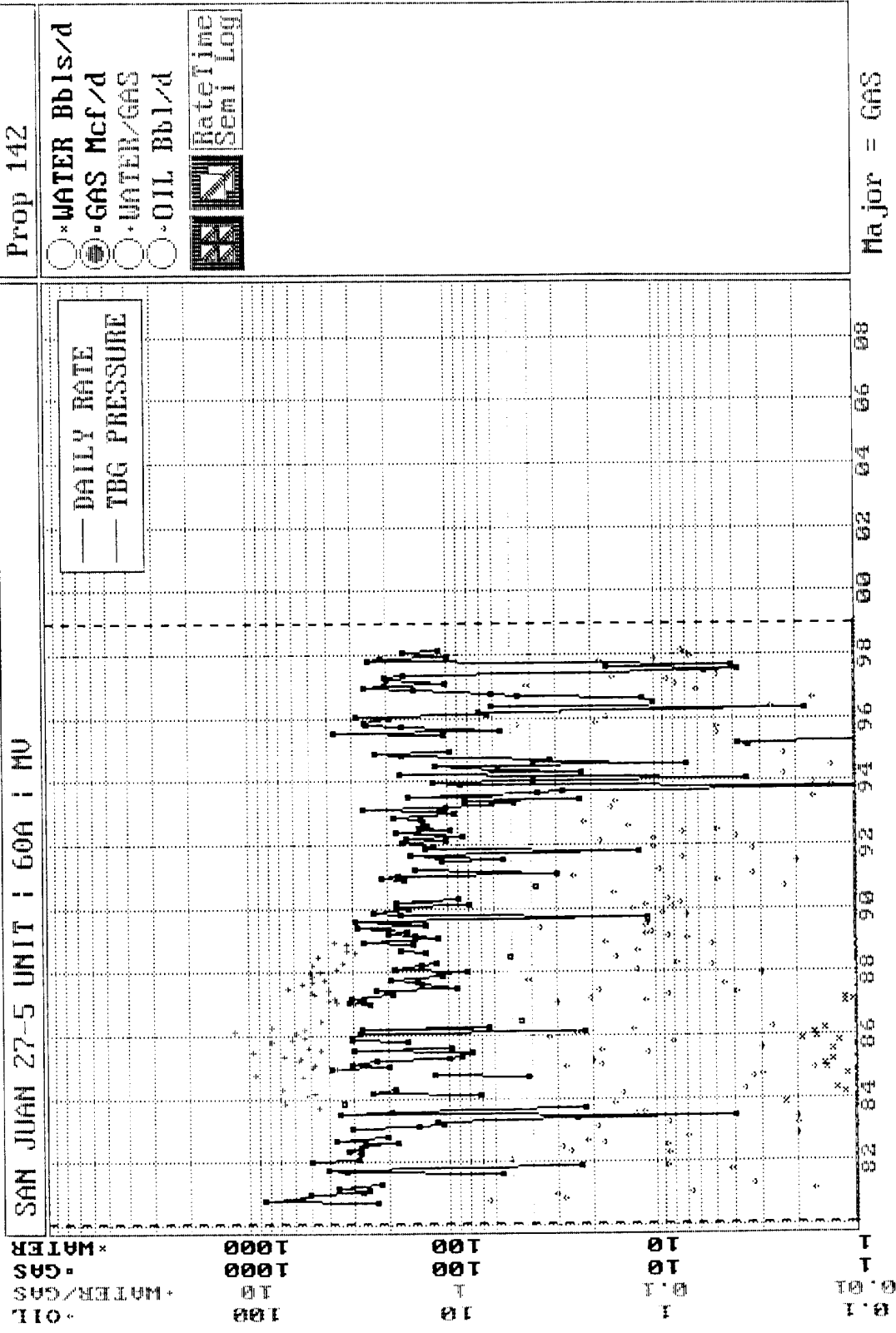
Fred B. Korr Jr.

Fred B. Korr Jr.

State Engineer

3950





San Juan 27-5 Unit #60A
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	0.66	GAS GRAVITY	0.698
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.38	%N2	0.16
%CO2	0.58	%CO2	0.93
%H2S	0	%H2S	0
DIAMETER (IN)	7	DIAMETER (IN)	2.375
DEPTH (FT)	3462	DEPTH (FT)	5543
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	100	BOTTOMHOLE TEMPERATURE (DEG F)	150
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	338	SURFACE PRESSURE (PSIA)	332
BOTTOMHOLE PRESSURE (PSIA)	367.7	BOTTOMHOLE PRESSURE (PSIA)	380.4
<u>PC-Original</u>		<u>MV-Original</u>	
GAS GRAVITY	0.66	GAS GRAVITY	0.698
COND. OR MISC. (C/M)	C	COND. OR MISC. (C/M)	C
%N2	0.38	%N2	0.16
%CO2	0.58	%CO2	0.93
%H2S	0	%H2S	0
DIAMETER (IN)	7	DIAMETER (IN)	2.375
DEPTH (FT)	3462	DEPTH (FT)	5543
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	100	BOTTOMHOLE TEMPERATURE (DEG F)	150
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	918	SURFACE PRESSURE (PSIA)	885
BOTTOMHOLE PRESSURE (PSIA)	1008.2	BOTTOMHOLE PRESSURE (PSIA)	1028.2

Page No.: 4
Print Time: Tue May 12 13:48:37 1998
Property ID: 200
Property Name: SAN JUAN 27-5 UNIT | 60A | PICTURED CLIFFS
Table Name: S:\ARIES\78LTL\TEST.DBF

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

09/30/80		0	918.0
11/03/80		13374	684.0
05/04/81		28047	526.0
11/08/82		47585	506.0
05/02/84		61595	494.0
04/17/86		69158	620.0
09/28/89		111308	504.0
10/01/91		126382	720.0
06/01/93		145896	497.0
04/01/98		199813	338.0

Original

Current Estimated from Pz data

Page No.: 5
Print Time: Tue May 12 13:48:38 1998
Property ID: 201
Property Name: SAN JUAN 27-5 UNIT | 60A | MESAVERDE
Table Name: S:\ARIES\78LTL\TEST.DBF

<u>--DATE--</u>	<u>--CUM_OIL--</u>	<u>---CUM_GAS---</u>	<u>M SIWHP</u>
	Bbl	Mcf	Psi

04/17/80		0	885.0	Original
11/03/80		50242	562.0	
11/09/81		124393	524.0	
11/08/82		206125	459.0	
11/02/84		275394	559.0	
01/02/87		391615	550.0	
09/28/89		537878	496.0	
01/16/91		589823	475.0	
07/22/91		600134	487.0	
06/01/93		685376	452.0	Current estimated from Pz data
04/01/98		859140	332.0	

Package Preparation Volume Data

DPNo: 53393A

SAN JUAN 27-5 UNIT

60A

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
GWI:	68.0078%	64.8149%	Jan	782	0.0	23.3	1,042	0.0
GNI:	57.2658%	54.8288%	Feb	1,412	0.0	27.8	328	0.0
			Mar	1,188	0.0	31	1,088	0.0
<u>Volumes</u>			Apr	994	0.0	30	0	0.0
<u>(Days On)</u>	<u>MCFD</u>	<u>BOPD</u>	May	1,008	0.0	31	0	0.0
7 Day Avg	40	0.0	Jun	851	0.0	30	0	0.0
30 Day Avg	35	0.0	Jul	917	0.0	31	0	0.0
60 Day Avg	35	0.0	Aug	924	0.0	31	0	0.0
3 Mo Avg	27	0.0	Sept	872	0.0	30	0	0.0
6 Mo Avg	30	0.0	Oct	929	0.0	25	0	0.0
12 MoAvg	30	0.0	Nov	915	0.0	30	0	0.0
			Dec	1,058	0.0	31	0	0.0
<u>Volumes</u>			Total	11,850	0.0		2,458	0.0
<u>(Days in Month)</u>	<u>MCFD</u>	<u>BOPD</u>						
30 Day Avg	35	0.0						
60 Day Avg	35	0.0						
3 Mo Avg	27	0.0						
6 Mo Avg	29	0.0						
12 Mo Avg	30	0.0						

Print Form

Exit Volumes Data

6/2/98

Package Preparation Volume Data

DPNo: 53393B

SAN JUAN 27-5 UNIT

60A

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	On	MCF/M	BOPM
GWI:	67.4570%	64.6688%	Jan	6,288	127.0	31	5,005	21.0
GNI:	56.8126%	54.6845%	Feb	3,117	24.0	20.9	3,343	22.0
			Mar	6,187	26.0	31	2,438	16.0
<u>Volumes</u>			Apr	6,324	48.0	30	0	0.0
<u>(Days On)</u>	<u>MCFD</u>	<u>BOPD</u>	May	5,048	15.0	31	0	0.0
7 Day Avg	0	0.0	Jun	60	0.0	30	0	0.0
30 Day Avg	168	1.1	Jul	0	24.0	31	0	0.0
60 Day Avg	123	0.8	Aug	410	0.0	31	0	0.0
3 Mo Avg	120	0.7	Sept	12	0.0	30	0	0.0
6 Mo Avg	158	0.9	Oct	7,703	56.0	27	0	0.0
12 MoAvg	111	0.7	Nov	6,568	30.0	30	0	0.0
			Dec	3,051	20.0	31	0	0.0
<u>Volumes</u>			Total	44,768	370.0		10,786	59.0
<u>(Days in Month)</u>	<u>MCFD</u>	<u>BOPD</u>						
30 Day Avg	168	1.1						
60 Day Avg	123	0.8						
3 Mo Avg	120	0.7						
6 Mo Avg	154	0.9						
12 Mo Avg	109	0.7						

Print Form

Exit Volumes Data

6/2/98

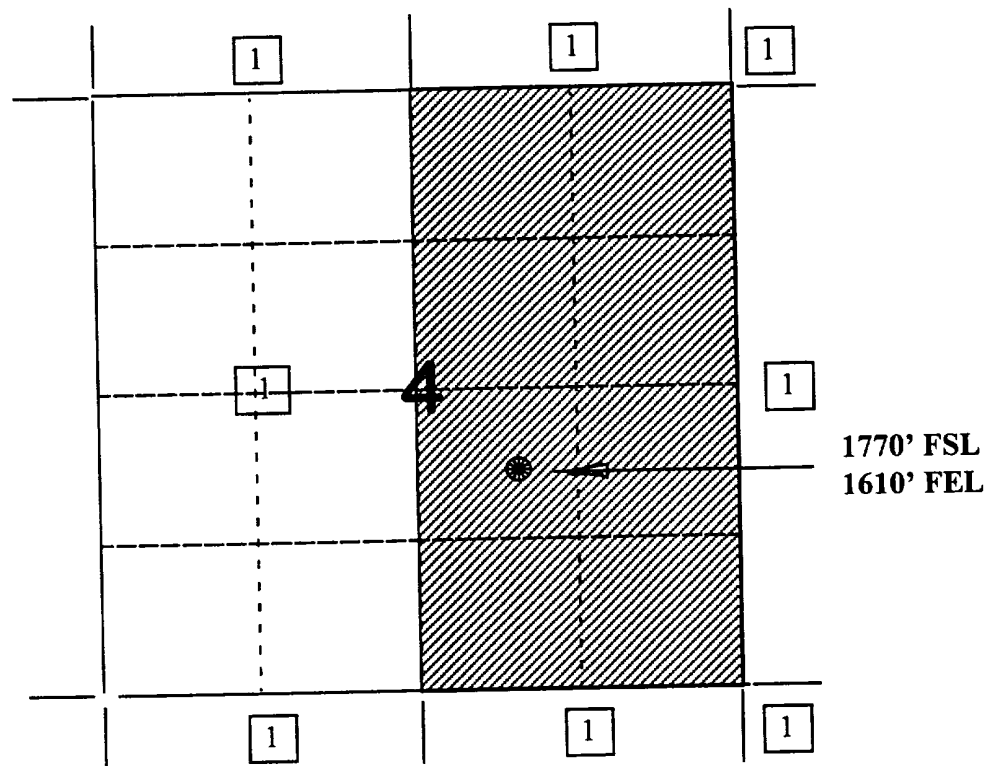
BURLINGTON RESOURCES OIL AND GAS COMPANY

San Juan 27-5 Unit #60A

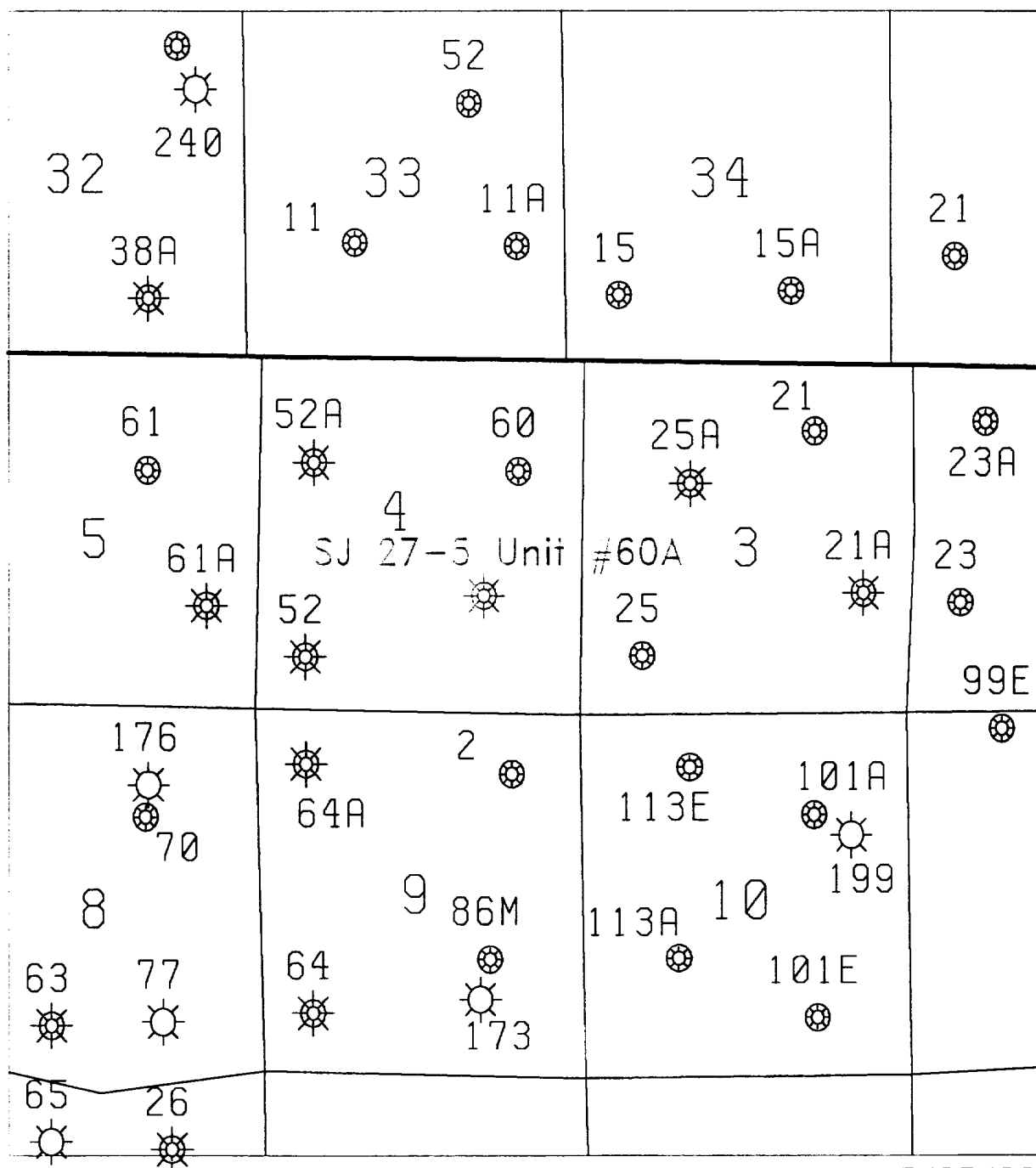
OFFSET OPERATOR/OWNER PLAT

Pictured Cliffs (SE/4) / Mesaverde (E/2) Formations Commingle Well

Township 27 North, Range 5 West



1) Burlington Resources



PLH 5/27/98

San Juan 27-5 Unit #60A
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.

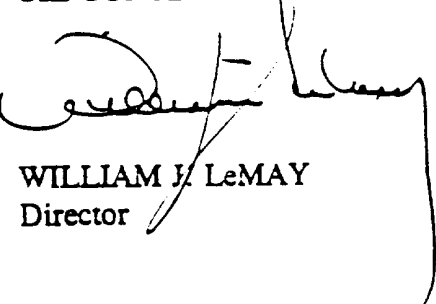
(2) Upon filing of Division Form No. C-107-A's for wells subsequently downhole commingled within the San Juan 27-5 Unit Area, the applicant shall not be required to submit supporting data to justify the classification of the Pictured Cliffs and Dakota formations as "marginal", supporting data to verify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