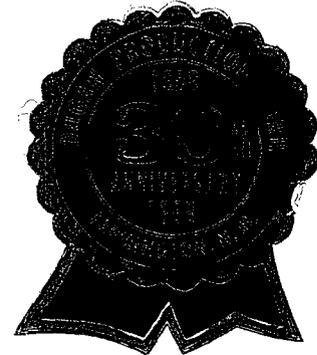


# dugan production corp.

RECEIVED

MAY - 1 1989  
OIL CONSERVATION DIV.  
SANTA FE

April 19, 1989



New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504

Attention: William LeMay

Re: Request for administrative approval to downhole commingle  
Blanco Mesaverde Gas Pool and  
Gobernador Pictured Cliffs Gas Pool  
Dugan Production Corp's  
Sherman No. 2  
Federal Lease No. NM-23047  
Unit E, Section 3, T29N, R5W, NMPM  
Rio Arriba County, New Mexico

Dear Mr. LeMay:

We are writing to request administrative approval for the downhole commingling of production from the Blanco Mesaverde Gas Pool and Gobernador Pictured Cliffs Gas Pool in the subject well.

The Sherman No. 2 well was drilled in July, 1979 and dually completed in the Blanco Mesaverde Gas Pool and the Gobernador Pictured Gas Pool, which was permitted by Order MC #2286. The Gobernador Pictured Cliffs formation was perforated in the 3182' - 3222' and 3316' - 3366' intervals, stimulated with 67300 gals. of water with 50,000 lbs of sand and completed on September 11, 1976 with an initial potential of 481 MCFD. The Blanco Mesaverde formation was perforated in the interval of 5222' - 5606', stimulated with 105,000 gals. of water with 40,000 lbs. of sand and also completed on September 11, 1988 with an initial potential of 1099 MCFD (see Attachment No. 1).

Production from both completions has been somewhat erratic since 1981. The Pictured Cliffs completion has been shut-in since October 1987 and averaged 71 MCFD plus less than 1/2 bbl condensate per day during September 1987 prior to shutting in. The Mesaverde completion is the better of the two completions and did produce 32,495 MCF during 1988. Production during August 1988 averaged 212 MCFD with the use of a wellhead compressor. Prior to installing the compressor, production was very erratic, averaging 40-100 MCFD.

Letter to Mr. LeMay, NMOCD  
Re: DPC's Sherman #2 DHC Application  
April 19, 1989  
Page 2

The cumulative production for the subject well from the Blanco Mesaverde Gas Pool as of January 1, 1989 is 331,973 MCF of gas. The cumulative production from the Gobernador Pictured Cliffs Gas Pool as of January 1, 1989 is 223,086 MCF of gas and 797 bbls of condensate.

The ownership of the two pools involved is common in both the working interest and the royalty interest since lease No. NM-23047 covers the north half of Section 3, T29N, R5W and there is no division of interest within the lease. The production unit for the Blanco Mesaverde is 320 acres which covers the north half of Section 3, T29N, R5W. The Gobernador Pictured Cliffs production unit of 160 acres covers the northwest quarter of Section 3, T29N, R5W.

Commingled production from the Mesaverde and Pictured Cliffs formations in offsetting wells appears to be compatible and to date there has been no evidence that the mixing of the fluids have resulted in the formation of precipitates which would be damaging to either zone. It is a common practice to downhole commingle production from the Mesaverde and the Pictured Cliffs formations and we are not aware of any fluid sensitivity of either formation in the Blanco Mesaverde Pool or the Gobernador Pictured Cliffs Pool in this area. Both formations are routinely stimulated using water so we would not expect either zone to be subject to damage from water or other produced liquids.

In order to establish allocation factors, we suggest basing the factors on past production of the two zones which would result in allocation factors as follows:

	<u>Condensate</u>	<u>Gas</u>
Gobernador Pictured Cliffs	100%	40%
Blanco Mesaverde	0%	60%

The total value of any condensate produced should not be reduced by commingling the Mesaverde and the Pictured Cliffs zones in the subject well. Nor should the commingling jeopardize the efficiency of present or future secondary recovery operations in either of the zones to be commingled. The proposed commingling is necessary because it is our opinion that repairing a recently developed packer leak in the dually completed Sherman No. 2 will be an additional economic burden that cannot be justified in the current gas market. With the low volumes of gas currently being produced and considering the current gas market, work to repair the tubing or packer leak will add an economical burden which may force the premature

Letter to Mr. LeMay, NMOCD  
Re: DPC's Sherman #2 DHC Application  
April 19, 1989  
Page 3

abandonment of both zones in the well before recoverable reserves are completely depleted and will result in the waste of hydrocarbons.

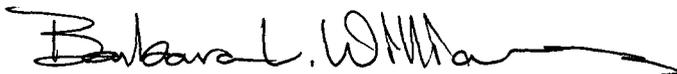
We do not believe that cross-flow will occur from commingling these zones. The bottomhole pressure has been calculated to be 693 psia in the Pictured Cliffs and 746 psia in the Mesaverde using surface pressures recorded during the most recent packer leakage test prior to developing communication. We feel that these pressures are indicative of the maximum bottomhole pressures which could currently exist.

Attached are copies of the letter sent to all offset operators and the Bureau of Land Management notifying them of this proposed commingling. The BLM was notified because of the Federal acreage involved (see Attachments Nos. 2 & 3).

In summary, Dugan Production is requesting administrative approval for the downhole commingling of production from the Gobernador Pictured Cliffs Gas Pool and the Blanco Mesaverde Gas Pool in the Sherman No. 2 well located in Section 3, T29N, R5W, Rio Arriba County, New Mexico.

Should you have any questions concerning this request, please contact me or John Roe of this office.

Sincerely,



Barbara L. Williams  
Engineer

BW\dhc\Sherman.2

cc: NMOCD - Aztec

DUGAN PRODUCTION CORP.

Downhole Commingling Application  
Sherman No. 2  
Attachment No. 1

8-5/8" OD casing @ 201'  
Cemented to surface w/150 sx

3182'  
3366'

Pictured Cliffs Perforations  
(1 hole/ft) 3316-3366', 3182-3222'  
Blast joints located across Pictured  
Cliffs perforations in Mesaverde  
tubing string.

1-1/4" OD tubing @ 3357'

Two-stage tool @ 3538'  
Cemented w/810 cu ft

5222'

Baker Model "D" Packer @ 5200'

Mesaverde Perforations  
(1 hole) 5222', 5242', 5365', 5444',  
5464', 5482', 5566', 5581', 5594', 5606'  
(10 holes) 5519-5539'

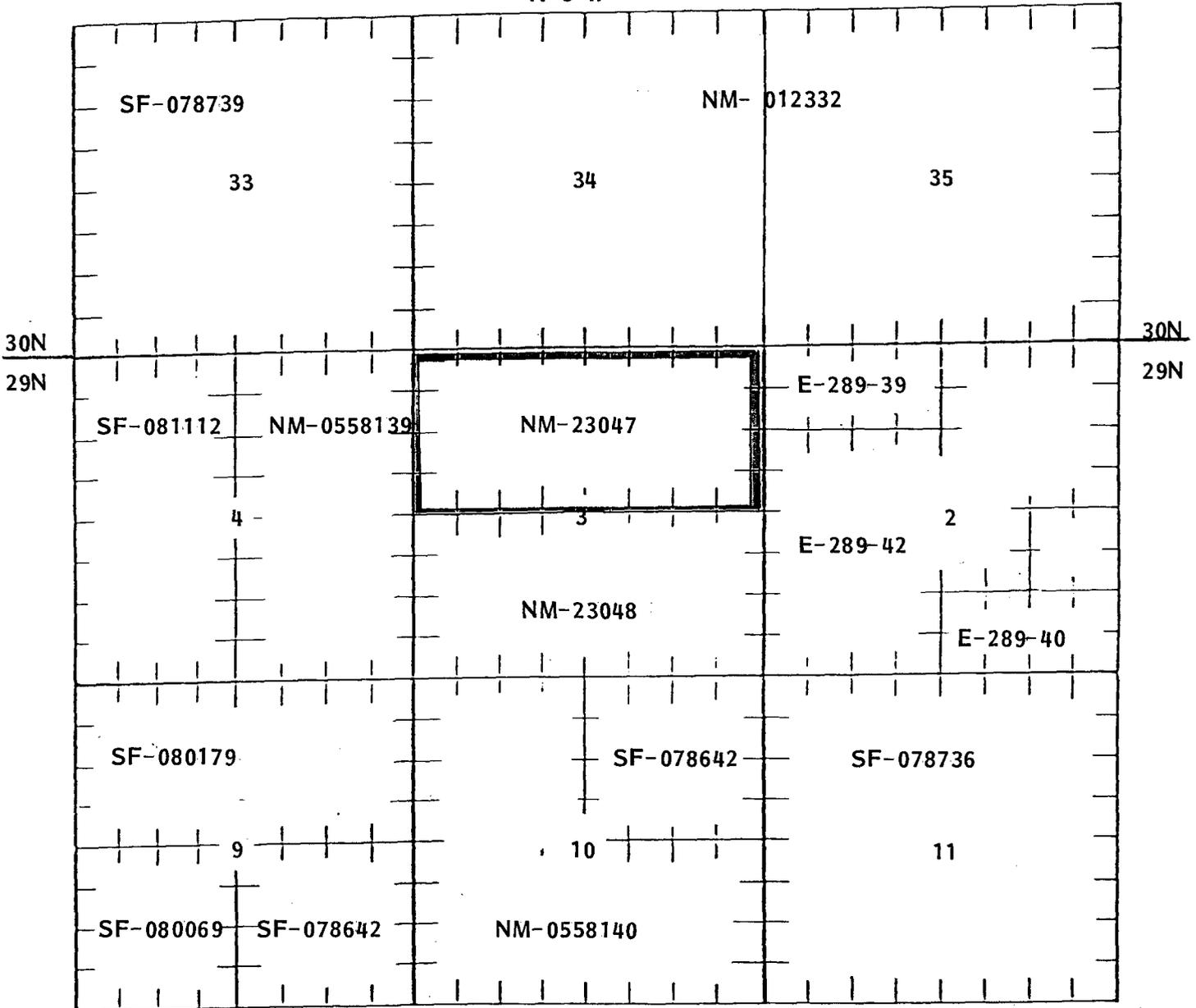
5606'

1-1/4" tbg set @ 5550'  
5-1/2" csg set @ 5764'  
Cemented first stage  
w/448 cu ft cement  
7-7/8" hole to TD 5721'

ATTACHMENT NO. 2

Application for Downhole Commingling  
Sherman No. 2  
Offsetting Leases

R-5-W



**ATTACHMENT NO. 3**

**APPLICATION FOR DOWNHOLE COMMINGLING**

**SHERMAN NO. 2**

**Offsetting Leases and Operators**

1. SF - 078739  
T-30-N, R-5-W, NMPM  
Section 33: all  
El Paso Natural Gas
2. NM - 012332  
T-30-N, R-5-W, NMPM  
Section 34: all  
Section 35: all  
El Paso Natural Gas
3. E - 289 - 39  
T-29-N, R-5-W, NMPM  
Section 2: N/2 NW/4  
Northwest Pipeline Corp.
4. E - 289 - 42  
T-29-N, R-5-W, NMPM  
Section 2: S/2 NW/4, SW/4, SE/4, NW/4 SE/4  
Northwest Pipeline Corp.
5. NM - 23048  
T-29-N, R-5-W, NMPM  
Section 3: S/2  
Dugan Production Corp.
6. NM - 0558139  
T-29-N, R-5-W, NMPM  
Section 4: E/2  
Southland Royalty  
c/o Meridian
7. SF - 080179  
T-29-N, R-5-W, NMPM  
Section 9: N/2  
Northwest Pipeline Corp.
8. NM - 0558140  
T-29-N, R-5-W, NMPM  
Section 10: NW/4, S/2  
Southland Royalty  
c/o Meridian
9. SF - 078642  
T-29-N, R-5-W, NMPM  
Section 10: NE/4  
El Paso Natural Gas
10. SF - 078736  
T-29-N, R-5-W, NMPM  
Section 11: all  
El Paso Natural Gas



# dugan production corp.

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April 28, 1989

Bureau of Land Management  
1235 La Plata Hiway  
Farmington, NM 87401

Re: Application for Downhole Commingling  
DUGAN PRODUCTION CORP.  
Sherman No. 2  
Sec.3, T30N, R5W, NMPM  
San Juan County, New Mexico

Gentlemen,

Enclosed please find the following items with regard to the above referenced matter:

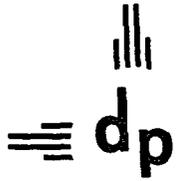
1. Application by Dugan Production Corp. for Downhole Commingling of the Sherman No. 2 well in San Juan County, New Mexico and
2. A copy of the cover letter to William Lemay, New Mexico Oil Conservation Division.

Please contact me should you have any questions.

Sincerely,

Barbara L. Williams  
Engineer

BLW/BW/DHC/OFF-NOTE.MER



# dugan production corp.

April 28, 1989

El Paso Natural Gas  
C/O Meridian Oil Inc.  
3535 E. 30th St.  
Farmington, NM 87401

Re: Application for Downhole Commingling  
DUGAN PRODUCTION CORP.  
Sherman No. 2  
Sec. 3, T30N, R5W, NMPM  
San Juan County, New Mexico

Gentlemen,

Enclosed please find the following items with regard to the above referenced matter:

1. Application by Dugan Production Corp. for Downhole Commingling of the Sherman No. 2 well in San Juan County, New Mexico and
2. A copy of the cover letter to William Lemay, New Mexico Oil Conservation Division.

Please contact me should you have any questions.

Sincerely,

Barbara L. Williams  
Engineer

BLW/BW/DHC/OFF-NOTE.MER



# dugan production corp.

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April 28, 1989

Northwest Pipeline Corp.  
3539 E. 30th St.  
Farmington, NM 87401

Re: Application for Downhole Commingling  
DUGAN PRODUCTION CORP.  
Sherman No. 2  
Sec.3, T30N, R5W, NMPM  
San Juan County, New Mexico

Gentlemen,

Enclosed please find the following items with regard to the above referenced matter:

1. Application by Dugan Production Corp. for Downhole Commingling of the Sherman No. 2 well in San Juan County, New Mexico and
2. A copy of the cover letter to William Lemay, New Mexico Oil Conservation Division.

Please contact me should you have any questions.

Sincerely,

Barbara L. Williams  
Engineer

BLW/BW/DHC/OFF-NOTE.MER



# dugan production corp.

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April 28, 1989

Southland Royalty  
C/O Meridian Oil Inc.  
3535 E. 30th St.  
Farmington, NM 87401

Re: Application for Downhole Commingling  
DUGAN PRODUCTION CORP.  
Sherman No.2  
Sec. 3, T29N, R5W, NMPM  
San Juan County, New Mexico

Gentlemen,

Enclosed please find the following items with regard to the above referenced matter:

1. Application by Dugan Production Corp. for Downhole Commingling of the Sherman No. 2 well in San Juan County, New Mexico and
2. A copy of the cover letter to William Lemay, New Mexico Oil Conservation Division.

Please contact me should you have any questions.

Sincerely,

Barbara L. Williams  
Engineer

BLW/BW/DHC/OFF-NOTE.MER



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE

GARREY CARRUTHERS  
GOVERNOR

1000 RIO BRAZOS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-6178

Date: 5/2/89

Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504-2088

Re: Proposed MC \_\_\_\_\_  
Proposed DHC α \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Gentlemen:

I have examined the application dated 5/1/89  
for the Dugan Production Corp. Sherman #2  
Operator Lease & Well No.

E-3-29N-SW and my recommendations are as follows:  
Unit, S-T-R

Approve  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Yours truly,

[Signature]

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MAY - 8 1989

OIL CONSERVATION DIV.  
SANTA FE

# MERIDIAN OIL

May 10, 1989

Dugan Production Company  
Attention: Ms. Barbara G. Williams  
Post Office Box 5820  
Farmington, New Mexico 87499-5820

Re: Request for Downhole Commingling  
Sherman #2, Pictured Cliffs, Mesaverde  
NW/4 Section 3, T29N, R5W  
Rio Arriba County, New Mexico

Dear Ms. Williams:

This is to advise that Southland Royalty Company does not have any objections to the referenced application with the NMOCD.

Please contact the undersigned at 326-9760 if there are any questions regarding this matter.

Yours very truly,



Linda Donohue  
Landman

LD:jf

Attachments

Doc. 281+

Dugan Corres. File

xc: NMOCD /  
Attn: Mr. William Le May  
P.O. Box 2088  
Santa Fe, N.M. 87504

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**MAY 15 1989**

**OIL CONSERVATION DIV.  
SANTA FE**