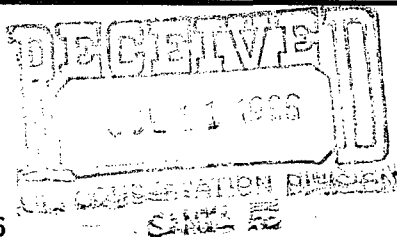


# dugan production corp.



July 10, 1986

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

Attn: Richard L. Stamets, Director

Re: Request for Administrative Approval for Downhole Commingling  
Silverridge Corporation  
Johnston-Shear #1  
Federal Lease Jicarilla Apache 09-000115  
Unit H, Sec. 3, T26N, R3W  
Rio Arriba County, New Mexico  
Undesignated Pictured Cliffs Oil Pool and  
Blanco Mesaverde Gas Pool

Dear Sir:

We are writing to request administrative approval for downhole commingling of the above captioned well. The pools to be commingled are the Blanco Mesaverde gas pool and an Undesignated Pictured Cliffs oil pool. Please note that the Undesignated Pictured Cliffs pool is a single well pool.

The subject well was drilled in November 1958 and was dually completed in the aforementioned formations. The Mesaverde formation was initially perforated through the intervals 5870-5908', and stimulated with a sand-water fracture treatment. This interval was then abandoned with no production. The plug back total depth is 5607'. The Mesaverde was then perforated 5470 - 5486' and 5500 - 5512'. This zone was also treated with a sand-water frac job. The initial potential was 3478 MCFD.

The Pictured Cliffs was perforated 3706 - 3718', 3731 - 3733', 3754 - 3776' and 3796 - 3800', for a total of 40 feet of pay with 3 shots/ft. This zone was also treated with a sand-water frac job. Initial potential was given as 675 MCFD.

The Pictured Cliffs IP is misleading. Only a very minute amount of gas has been produced from this Undesignated Pictured Cliffs pool since at least 1967.

Letter to NMOCD  
July 10, 1986  
Page 2

The well was placed on production sometime in 1959. The Blanco Mesaverde cumulative production as of December 31, 1985 was 1,657,296 MCF gas and 7,376 bbls of condensate. The Pictured Cliffs formation had produced a total of 19,016 bbls of oil as of December 31, 1985. Currently, the well is capable of producing 115 MCFD from the Mesaverde on a 12 hour/day production schedule ( see Enclosure #1). The Pictured Cliffs oil pool is capable of 3.49 BOPD with a small amount of water and very little gas (see Enclosure #2).

Construction of decline curves for the individual pools shows the Mesaverde declining at the rate of 6%/year for the years 1967 through 1977. It is estimated that the decline has accelerated to 7%/year for the years 1978 through May 1986 (Figure #1). The decline estimate for the years 1978 through 1986 was based on the decline of the average monthly gas production for that period (Figure #2).

Figure #3 depicts the decline curve for the oil production from the Pictured Cliffs interval. The decline is estimated at 6%/year for the years 1967 through 1978 based on the annual oil production curve. The decline is estimated at 16%/year for the years 1981 through 1984.

A sporadic production schedule makes a decline estimate difficult for the recent years (1979-1986) of production for this pool. The zone has been shut-in for periods of time ranging from one month to seven months, and the days of production per month have also varied greatly.

From this data, and noting the long history of the well and the fact that the subject well is located on the Jicarilla Apache Indian Reservation resulting in a larger tax burden, it is Dugan Production Corp's opinion that the well is approaching its economic limit.

Recently this office received notification from the New Mexico Oil Conservation Division that the annual packer leakage test indicates communication between the producing horizons (Enclosure #3). Remedial operations needed to correct this situation would entail pulling both strings of tubing and setting a new packer to ensure separation of the subject horizons. It is Dugan Production's opinion that this work would not be economically justifiable due to current depressed oil and gas prices.

Due to the packer leakage, the latest reliable pressure data for the well indicated a shut-in wellhead pressure for the Pictured Cliffs of 660 psig and 700 psig for the Mesaverde. Static bottom hole pressures were then calculated to be 756 psia for the Pictured Cliffs and 820 psia for the Mesaverde. Both zones are currently capable of flowing.

Letter to NMOCD  
July 10, 1986  
Page 3

Ownership of both zones is common, and correlative rights will not be violated. Offset operators will be notified of this proposed commingling (Figure #4) by letter. The latest oil run tickets indicate that the gravity of the produced fluids is 51° API. Both zones have been produced through and stored in the same surface equipment for a number of years without precipitates forming when combined.

The Pictured Cliffs oil production totaled 1203 bbls from January 1, 1984 through May 31, 1986. The Mesaverde produced 208 bbls of oil for the same time interval. The allocation factors that Dugan Production Corp. would propose to apply to the commingled production stream would be as follows:

	Gas	Oil
Pictured Cliffs	0%	85%
Mesaverde	100%	15%
Totals	100%	100%

There are four Pictured Cliffs completions offsetting the subject well. Three of the four have not produced any oil since January 1985. The fourth well produces oil sporadically and in small quantities. The cumulative oil production from these four wells totals 9,917 bbls through December 31, 1985, while the subject well had produced to that date 19,016 bbls oil. We, therefore, do not expect the commingled value of the production to be less than that of the individual streams.

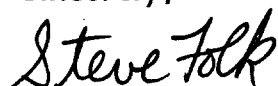
In summation, we are requesting administrative approval to downhole commingle the Johnston-Shear #1. The pools proposed to be commingled are the Blanco Mesaverde Gas Pool and a one well Undesignated Pictured Cliffs Oil Pool. The ownership of the subject zones is common and correlative rights will not be violated. The produced fluids are compatible and have been surface commingled for some time. Each of the producing horizons were sand-water fracture treated and, therefore, are not fluid sensitive. Calculated bottom hole pressures indicate that cross-flow between zones will not occur.

Remedial operations on this well cannot be economically justified and in the event of this application not being approved, the Pictured Cliffs zone will most likely be abandoned, and possibly even the Mesaverde. The well has produced for 28 years and any incremental production realized from remedial operations would be insignificant at best.

All offset operators, the Bureau of Land Management and the Aztec district office of the New Mexico Oil Conservation Division have been notified in writing of the proposed commingling. Copies of these letters are attached.

If you need further information, or have questions regarding this matter, please feel free to contact me at this office.

Sincerely,



Steve Folk  
Geologist

SF/cg  
encs.

## SWITCHER REPORT

NW RUN # 07

Operator SilverRidge Lease JOHNSTON SHEAR Well No. 1  
 Prod. Fm. Undes. P.C. H Sec. 3, T 26 N, R 3 W County Rio Arriba State NM  
 Run Size 4" Plate Size .750 Static Spring 500 # Range 100 " Coef. 7.00

DATE	STATIC	DIFF.	TEMP.	TBG. PRESS.	CSG. PRESS.	TANK	TANK	12 Hrs./Day	Intermitter	ON12 OFF
93 1	6.7	4.0				5-9 1/2				DAYS PROD. 30
100 2	7.2	4.0				6-0				DAYS ON 30
81 3	7.8	3.0								DAYS SI 0
81 4	7.8	3.0				6-1				
107 5	7.7	4.0								
106 6	7.6	4.0				6-4				
147 7	7.0	6.0								
142 8	6.8	6.0								
140 9	6.7	6.0								
142 10	7.4	5.5				6-10				
103 11	7.4	4.0								
103 12	7.4	4.0								
103 13	7.4	4.0				7-0				
122 14	7.0	5.0								
120 15	6.9	5.0								
119 16	6.8	5.0								
119 17	6.8	5.0				7-6				
119 18	6.8	5.0								
120 19	6.9	5.0				7-8				
117 20	7.0	4.8								
117 21	7.0	4.8				7-10				115 mcf daily avg.
114 22	7.3	4.8								
117 23	6.7	5.0				7-11 1/2				CHART ON 5-31
117 24	6.7	5.0								CHART OFF
117 25	6.7	5.0				8-2		GOR		AVG. STATIC 6.8
117 26	6.7	5.0				8-3 1/2		GOR		AVG. DIFF 5.0
117 27	6.7	5.0				8-5				WATER/MONTH = 4
117 28	6.6	5.1								
120 29	6.5	5.2								
118 30	6.5	5.2				8-7 1/2				
3455 31										

ENCLOSURE # 1

GAS-OIL RATIO TESTS

Operator

Silverridge

Pool

Undesignated Picture Cliffs

Country

Rio Arriba

P.O. Box 208 Farmington, NM 87499

TYPE OF TEST - (X)

Scheduled ☒

Completion ☐

Special ☐

LEASE NAME

Johnston Shear

WELL NO.

1

LOCATION

U

S

T

R

H

3

26N

3W

DATE OF TEST

6-26-86

CHOKE SIZE

F - -

TBG. PRESS.

- -

DAILY ALLOW-ABLE

3

LENGTH OF TEST HOURS

24

PROD. DURING TEST

WATER BBL'S.

1/4

GRAV. OIL BBL'S.

51.0

OIL BBL'S.

3.49

GAS M.C.F.

TSTM

GAS - OIL RATIO CU.FT/BB

TSTM

ENCLOSURE #2

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowable when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Division in accordance with Rule 331 and appropriate pool rules.

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

*Madeline Wheeler*  
(Signature)  
Production Report Supervisor  
7-2-86

## Figure #1 Application for Downhole Commingle

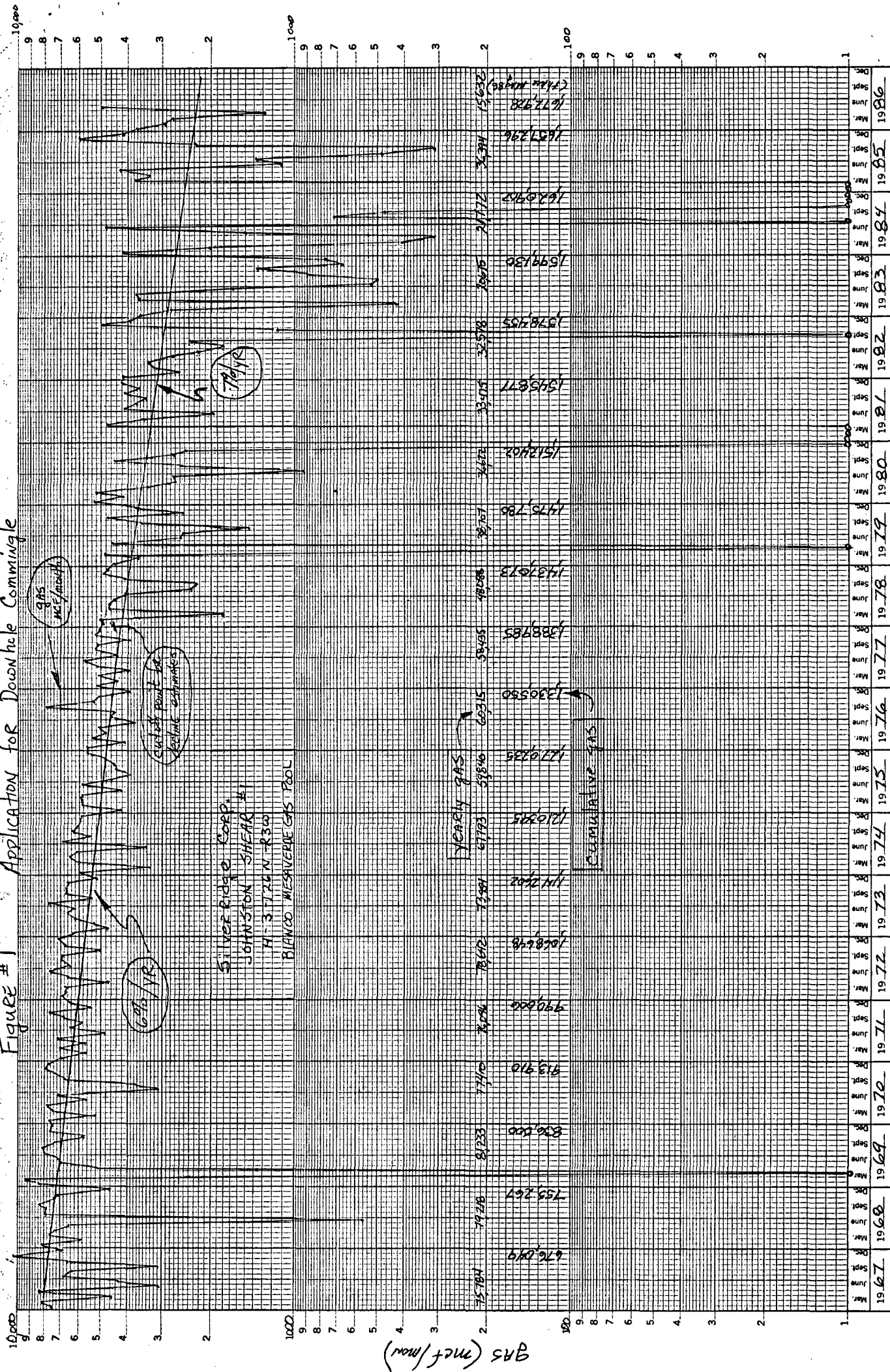
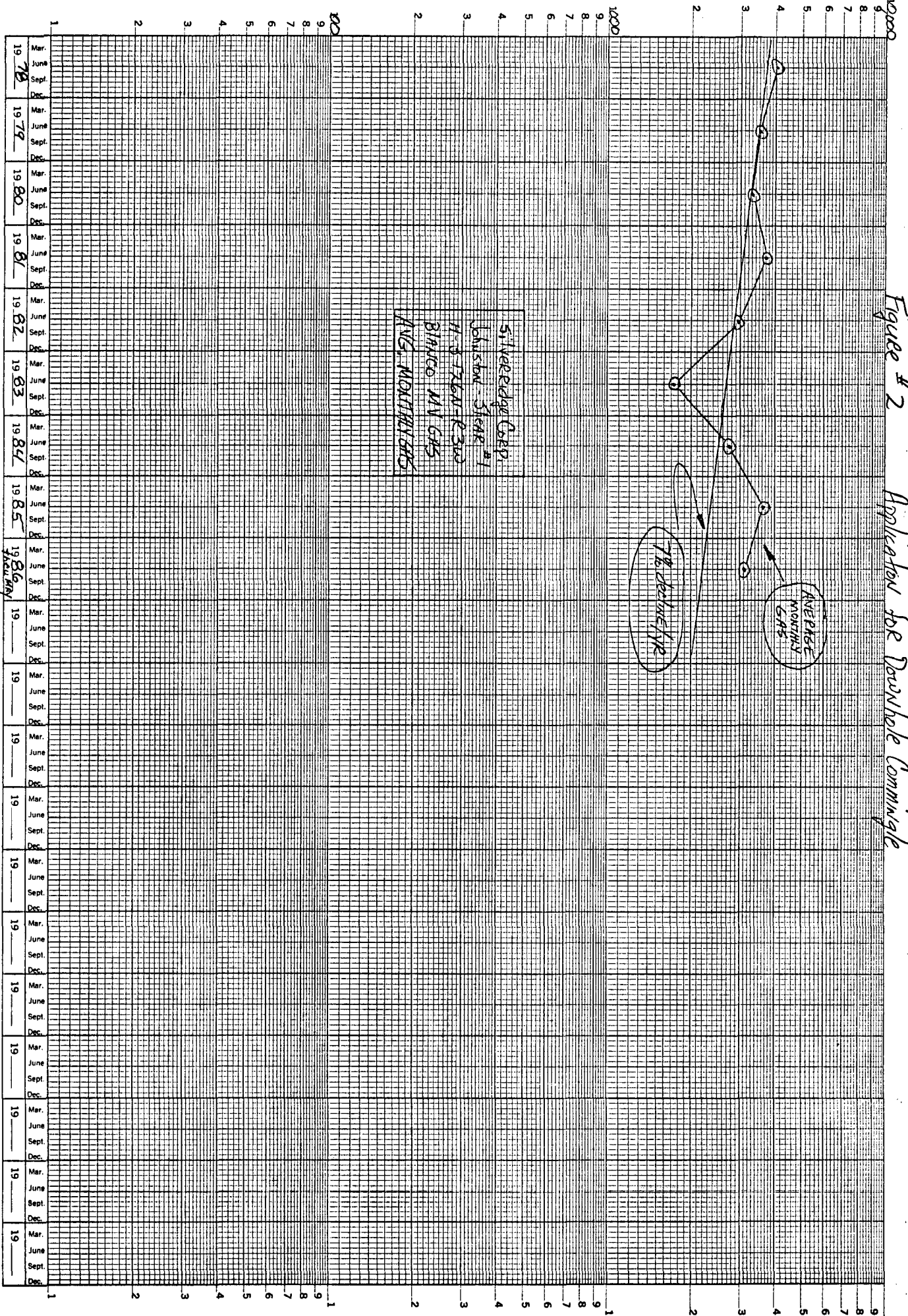


Figure # 2

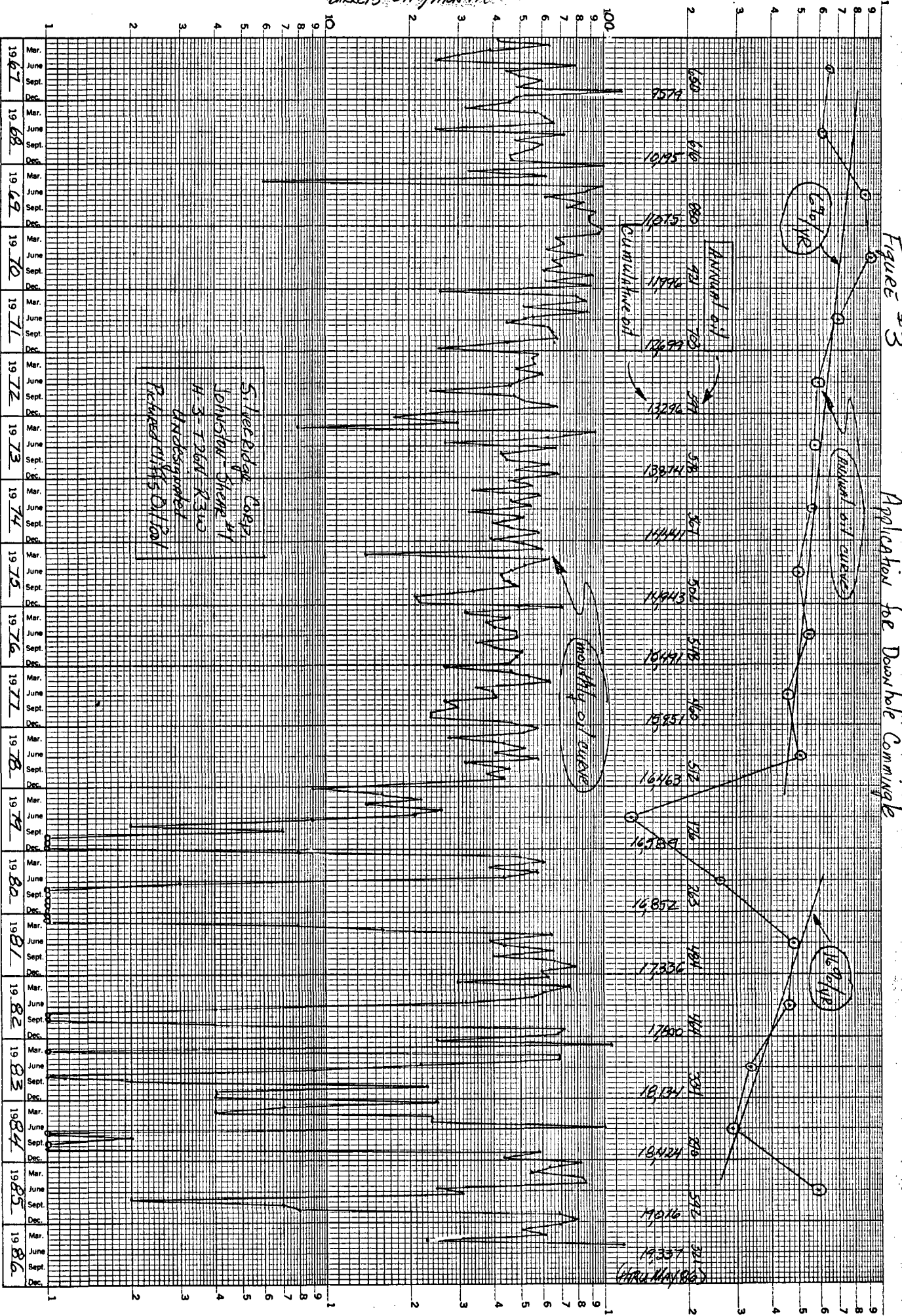
Application for Downhole Commingle



Barrels Oil/month

Figure #3

Application for Double Cumming



ENCLOSURE #3

WEST NEW MEXICO PACKER-LEAKAGE TEST

Operator Silverridge Corp Lease Johnston Shear Well No. 1  
Location of Well: Unit H Sec. 3 Twp. 26N Rge. 3W County Rio Arriba

Name of Reservoir or Pool		Type of Prod. (Oil or Gas)	Method of Prod. (Flow or Art. Lift)	Prod. Medium (Tbg. or Csg.)
Upper Completion	<u>Pictured Cliffs</u>	<u>Oil</u>	<u>Flow</u>	<u>Tbg.</u>
Lower Completion	<u>Mesaverde</u>	<u>Gas</u>	<u>Flow</u>	<u>Tbg.</u>

PRE-FLOW SHUT-IN PRESSURE DATA

Upper Compl	Hour, date Shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)
		<u>Always</u>	<u>590</u>	
Lower Compl	Hour, date Shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)
	<u>3:00 PM 5-12-86</u>	<u>3 days</u>	<u>600</u>	

FLOW TEST NO. 1

Commenced at (hour, date)*		5-15-86 3:30 PM		Zone producing ( <del>Upper</del> or Lower):	
Time (hour, date)	Lapsed time since*	Pressure		Prod. Zone Temp.	Remarks
		Upper Compl.	Lower Compl.		
10:00 AM 5-16-86	1 day	465	380		
11:00 AM 5-17-86	2 days	440	280		

Production rate during test  
Oil: \_\_\_\_\_ BOPD based on \_\_\_\_\_ Bbls. in \_\_\_\_\_ Hrs. \_\_\_\_\_ Grav. \_\_\_\_\_ GOR \_\_\_\_\_  
Gas: 201 MCFPD; Tested thru (Orifice or Meter): \_\_\_\_\_

MID-TEST SHUT-IN PRESSURE DATA

Upper Compl	Hour, date Shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)
Lower Compl	Hour, date Shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)

FLOW TEST NO. 2

Commenced at (hour, date)**				Zone producing (Upper or Lower):	
Time (hour, date)	Lapsed time since **	Pressure		Prod. Zone	Remarks
		Upper Compl.	Lower Compl.	Temp.	

Production rate during test  
Oil: \_\_\_\_\_ BOPD based on \_\_\_\_\_ Bbls. in \_\_\_\_\_ Hrs. \_\_\_\_\_ Grav. \_\_\_\_\_ GOR \_\_\_\_\_  
Gas: \_\_\_\_\_ MCFPD; Tested thru (Orifice or Meter): \_\_\_\_\_

REMARKS: Pictured Cliffs does NOT produce gas, only oil

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


Approved: \_\_\_\_\_ 19 \_\_\_\_\_  
Oil Conservation Division  
By \_\_\_\_\_  
Title Agent  
Date 5-28-86

# FIGURE #4

## Application for Downhole Commingle

Plat showing dedicated acreage and offsetting lease ownership.  
Compiled from MINERALS MANAGEMENT LEASE FILES Farmington, New Mexico

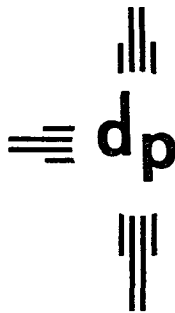
R3W

	Northwest Pipeline (All)  33	Northwest Pipeline (All)  34	MOBIL (All)  35	
T27N				T27N
T26N	Consolidated O & G (All)  4	Consolidated O & G. (W 1/2)	MOBIL (All)  2	T26N
5		<div style="border: 1px dashed black; padding: 5px; display: inline-block;"> Silver Ridge    Johnston-Shear #1 </div>		
8	Consolidated O & G (E 1/2)  9	Consolidated O & G (W 1/2)	MOBIL (All)  11	
		Northwest Production (E 1/2) El Paso Explor. is listed as current operator 10		

R3W

dedicated acreage  
for subject well

////////



dugan production corp.

---

July 10, 1986

Bureau of Land Management  
Caller Service 4104  
Farmington, NM 87499

Attn: Mr. Stan McKee

Re: Request for Administrative Approval for Downhole Commingling  
Silverridge Corporation  
Johnston-Shear #1  
Federal Lease Jicarilla Apache 09-000115  
Unit H, Sec. 3, T26N, R3W  
Rio Arriba County, New Mexico  
Undesignated Pictured Cliffs Oil Pool and  
Blanco Mesaverde Gas Pool

Dear Mr. McKee:

Enclosed for your information is a copy of the application to downhole commingle the Silverridge Corporation's Johnston-Shear #1 well. The well is located on Federal Lease Jicarilla Apache 09-000115.

All offset operators and the Director of the New Mexico Oil Conversation Division have been notified in writing of this application.

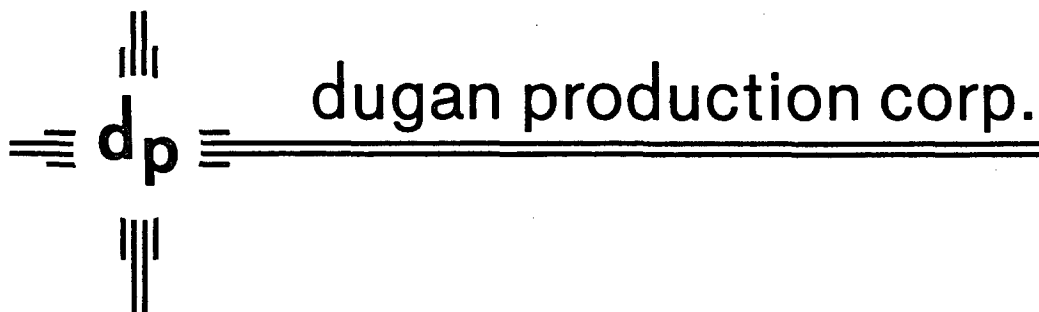
Please contact me at Dugan Production if you have any questions.

Sincerely,

Steve Folk  
Geologist

SF/cg

encs.



July 10, 1986

Mr. Frank Chavez  
New Mexico Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, NM 87410

Re: Request for Administrative Approval for Downhole Commingling  
Silverridge Corporation  
Johnston-Shear #1  
Federal Lease Jicarilla Apache 09-000115  
Unit H, Sec. 3, T26N, R3W  
Rio Arriba County, New Mexico  
Undesignated Pictured Cliffs Oil Pool and  
Blanco Mesaverde Gas Pool

Dear Mr. Chavez:

Enclosed for your information is a copy of the application to downhole commingle the Silverridge Corporation's Johnston-Shear #1 well. The well is located on Federal Lease Jicarilla Apache 09-000115.

All offset operators, the Director of the New Mexico Oil Conservation Division and the Bureau of Land Management have been notified in writing of this application.

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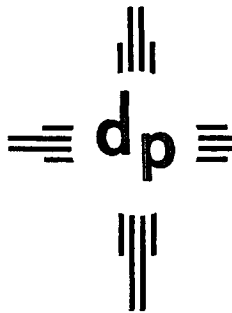
Sincerely,

A handwritten signature in cursive script that reads 'Steve Folk'.

Steve Folk  
Geologist

SF/cg

encs.



dugan production corp.

---

July 10, 1986

El Paso Exploration Co.  
P.O. Box 4289  
Farmington, NM 87499

Re: Request for Administrative Approval for Downhole Commingling  
Silverridge Corporation  
Johnston-Shear #1  
Federal Lease Jicarilla Apache 09-000115  
Unit H, Sec. 3, T26N, R3W  
Rio Arriba County, New Mexico  
Undesignated Pictured Cliffs Oil Pool and  
Blanco Mesaverde Gas Pool

Gentlemen:

The purpose of this letter is to inform you of the Silverridge Corporation's (care of Dugan Production Corp.) application to the New Mexico Oil Conservation Division for permission to downhole commingle production from the Blanco Mesaverde gas pool and an Undesignated Pictured Cliffs oil pool in the above captioned well.

Packer leakage tests indicate communication between the zones, and it is our opinion that remedial operations are not economically justifiable. This particular Pictured Cliffs completion has produced more oil than the four offsetting Pictured Cliffs completions together. Presently the well is capable of 3.49 BOPD from this horizon, and it is our wish to continue to produce this small but steady volume due to the economic climate.

Please find enclosed a map of the general area and a plat showing the offset operators.

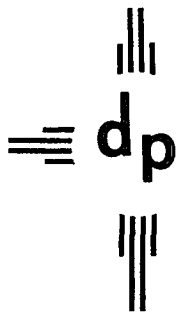
If you have any questions regarding this matter, feel free to contact me at Dugan Production.

Sincerely,

Steve Folk  
Geologist

SF/cg

encs.



# dugan production corp.

July 10, 1986

Northwest Pipeline Corp.  
P.O. Box 90  
Farmington, NM 87499

Re: Request for Administrative Approval for Downhole Commingling  
Silverridge Corporation  
Johnston-Shear #1  
Federal Lease Jicarilla Apache 09-000115  
Unit H, Sec. 3, T26N, R3W  
Rio Arriba County, New Mexico  
Undesignated Pictured Cliffs Oil Pool and  
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Sincerely,

Steve Folk  
Geologist

SF/cg

encs.



# dugan production corp.

---

July 10, 1986

Mobil Producing of Texas & New Mexico, Inc.  
9 Greenway Plaza East, Suite 2700  
Houston, Texas 77046

Re: Request for Administrative Approval for Downhole Commingling  
Silverridge Corporation  
Johnston-Shear #1  
Federal Lease Jicarilla Apache 09-000115  
Unit H, Sec. 3, T26N, R3W  
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Undesignated Pictured Cliffs Oil Pool and  
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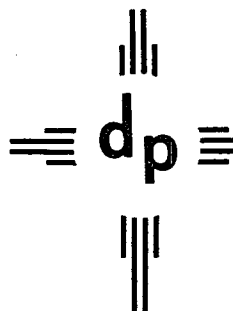
If you have any questions regarding this matter, feel free to contact me at Dugan Production.

Sincerely,

Steve Folk  
Geologist

SF/cg

encs.



# dugan production corp.

---

July 10, 1986

Columbus Energy Corp.  
Lincoln Tower Bldg.  
1860 Lincoln Street  
Denver, CO 80203

Re: Request for Administrative Approval for Downhole Commingling  
Silverridge Corporation  
Johnston-Shear #1  
Federal Lease Jicarilla Apache 09-000115  
Unit H, Sec. 3, T26N, R3W  
Rio Arriba County, New Mexico  
Undesignated Pictured Cliffs Oil Pool and  
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Sincerely,

Steve Folk  
Geologist

SF/cg



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

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

OIL CONSERVATION DIVISION  
BOX 2088  
SANTA FE, NEW MEXICO 87501

JUL 18 1986

DATE 7-14-86

RE: Proposed MC \_\_\_\_\_  
Proposed DHC X \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Gentlemen:

I have examined the application dated 7-11-86  
for the Silveridge Corp. Johnston-Stearth H-3-26N-30N  
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approved Johnston-Stearth H-3-26N-30N  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Yours truly,

Ed Bunch