STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

July 18, 1983

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Administrative Order No. DHC-407

RECEIVED
JUL 26 1983
OIL CON. DIV.
DIST. 3

EL PASO EXPLORATION COMPANY
P.O. Box 289
Farmington, NM 87401

Attention: G. W. Brink

Re: Mudge Well No. 4-A, 1015 feet FNL and 1950 FWL, Unit C, Sec. 1, T-31N, R-11W, San Juan County, Blanco Pictured Cliffs and Blanco Mesa Verde Pools

Gentlemen:

Reference is made to your recent application for an exception to Rule 303-A of the Division Rules and Regulations for the subject dually completed well to permit the removal of the down-hole separation equipment and to commingle the production from both pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and the Division Order which authorized the dual completion and required separation of the two zones, is hereby placed in abeyance.

In accordance with the provisions of Rule 303.C.4., total commingled condensate production from the subject well shall not exceed 30 barrels per day, and total water production from the well shall not exceed 60 barrels per day. The maximum amount of gas which may be produced daily from the well shall be determined by the standard deliverability testing procedures applied to proration in the area.

Assignment of allowable to the well and allocation of production from the well shall be on the following basis:

Blanco Pictured Cliffs Pool:	Condensate 0 %, Gas 25 %
Blanco Mesa Verde Pool:	Condensate 100 %, Gas 75 %

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

DATE June 14, 1983

RE: Proposed MC _____
Proposed DHC X
Proposed NSL _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated June 6, 1983

for the EPNG Co. Mudge #4A C-1-31N-11W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve

Yours truly,

Frank D. Chavez

El Paso EXPLORATION COMPANY

P. O. BOX 289
FARMINGTON, NEW MEXICO 87401

PHONE: 505-325-2841

May 26, 1983

Mr. Joe Ramey
New Mexico Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87501

Subject: Mudge #4A
Unit C, Section 1, T-31-N, R-11-W
San Juan County, New Mexico

Dear Mr. Ramey:

El Paso Natural Gas Company requests administrative approval to downhole commingle the production from its Mudge #4A gas well located in Unit C, Section 1, T-31-N, R-11-W, San Juan County, New Mexico. This well is producing from both the Blanco Pictured Cliffs Pool and the Blanco Mesa Verde Pool. El Paso Natural Gas Company owns 100% working interest in both producing intervals and feels downhole commingling is the most efficient means to produce the well. As reservoir pressures decline, condensate production will become more difficult, and it is intended to equip the well for a possible pumping unit in the future in order to maximize productivity and eliminate waste.

Currently, the Pictured Cliffs side of this wellbore has a casing failure. It is intended to downhole commingle and produce the well through one string of tubing after the casing failure is permanently repaired. Due to the casing failure, the current producing rate and bottom hole pressure for the Blanco Pictured Cliffs must be estimated from the 1982 production history and state deliverability test.

The attached production decline curves show both formations have established a steady rate of decline. Fluctuation in producing rates for the year 1982 is a result of line pressure changes and low market demand. It is estimated the Blanco Pictured Cliffs will produce at an average rate of 210 MCF/D after the casing failure is repaired. Furthermore, the Pictured Cliffs produces no condensate and water in an amount too small to measure. The Mesa Verde is currently producing 699 MCF/D of gas and 14.28 bbls. of condensate per day with water in amounts too small to measure. Since both formations produce relatively no water, no formation damage should occur as a result of downhole commingling. It is estimated the minimum combined producing rate after commingling will be 909 MCF/D of gas and 14.28 bbls. condensate per day with a probable increase in condensate production with the aid of the Pictured Cliffs gas lifting the Mesa Verde fluid.

The 1982 deliverability test showed the Pictured Cliffs zone to have a shut in pressure of 484 psia. The corresponding bottom hole pressure is estimated to be 519 psia. A current bottom hole pressure survey run of the Mesa Verde formation shows a bottom hole pressure of 587 psia. The ratio of bottom hole pressures is 1.13/1.0. Therefore, due to the small pressure differential between the two formations, it is not expected that any migration of gas or liquids will occur, particularly if the well is continuously produced.

It is proposed that the future production be allocated based on calculated remaining reserves. It is estimated that the Pictured Cliffs has approximately 1470 MMCF of remaining gas reserves and the Mesa Verde has about 4450 MMCF of remaining gas reserves, for a total of 5920 MMCF. Thus, based on remaining reserves, 25% of the well's gas production could be attributed to the Blanco Pictured Cliffs Pool and 75% to the Blanco Mesa Verde Pool. All condensate produced would be attributed to the Blanco Mesa Verde Pool.

All offset operators of the proposed commingling application, including the Minerals Management Service, have been notified by certified mail.

A well location plat, offset ownership plat, production decline curves, productivity test, and bottom hole pressure survey, are attached.

Sincerely,

G. W. Brink
Project Drilling Engineer

GWB:pb

att.

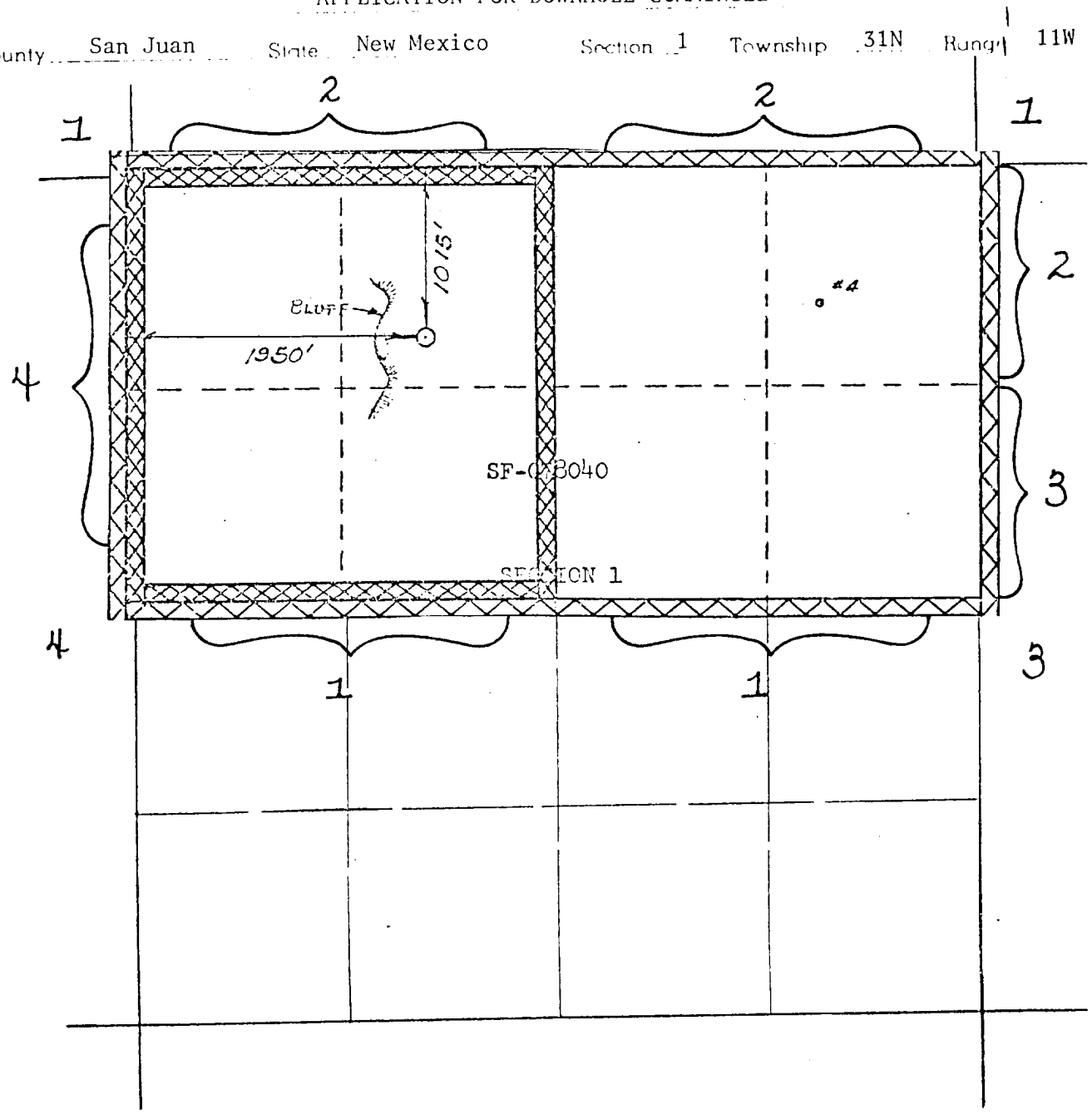
EL PASO NATURAL GAS COMPANY

Well Name Mudge #4 A, Blanco PC/Blanco MV

Footage---- 1015' FNL, 1950' FWL

APPLICATION FOR DOWNHOLE COMMINGLE

County San Juan State New Mexico Section 1 Township 31N Range 11W



REMARKS: (1) Southland Royalty Company

(2) Mesa Petroleum Company

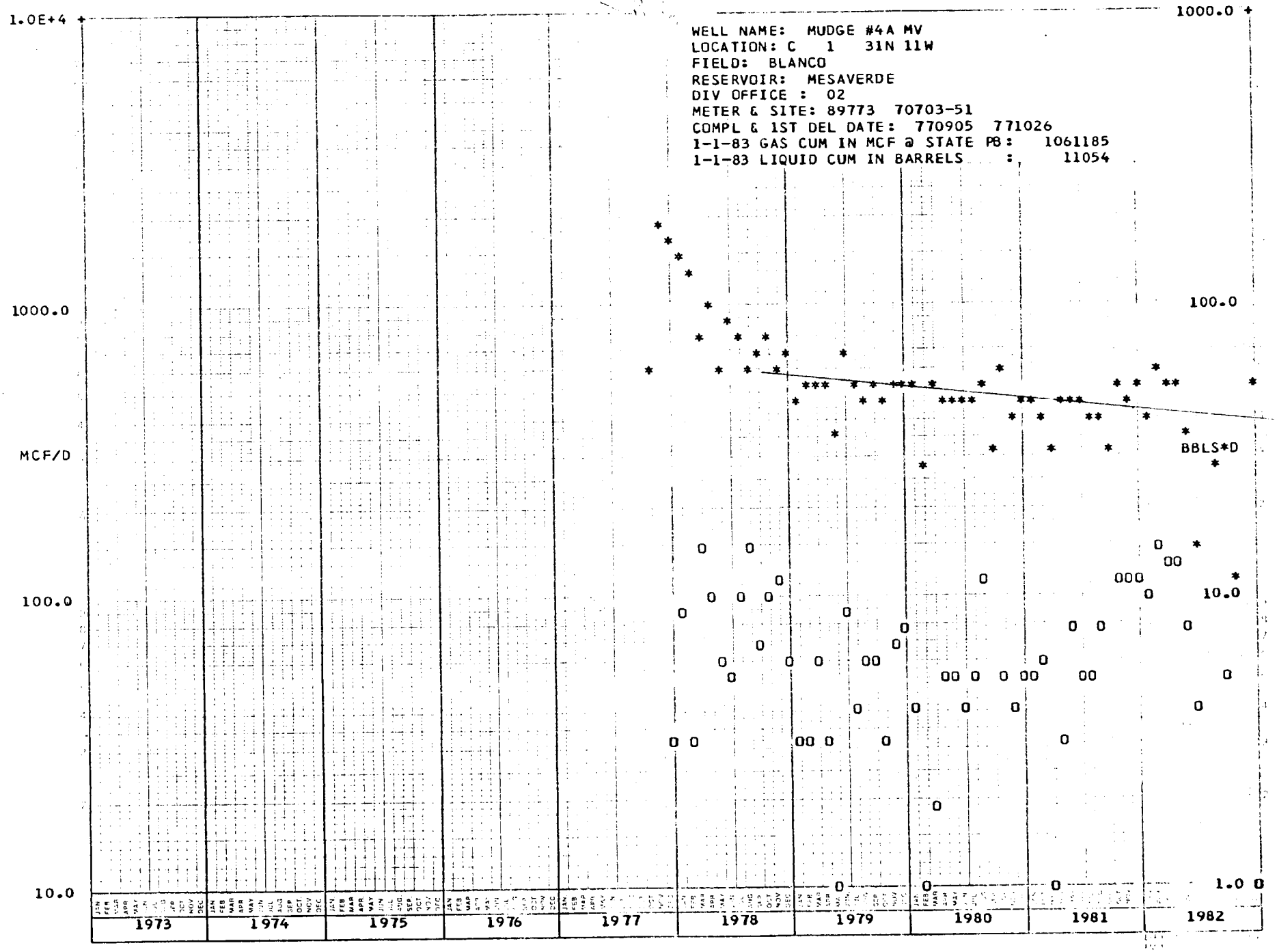
(3) C&E Operators, Inc.

(4) El Paso Natural Gas Company

RECEIVED
JUN
OIL CON.
DIST.

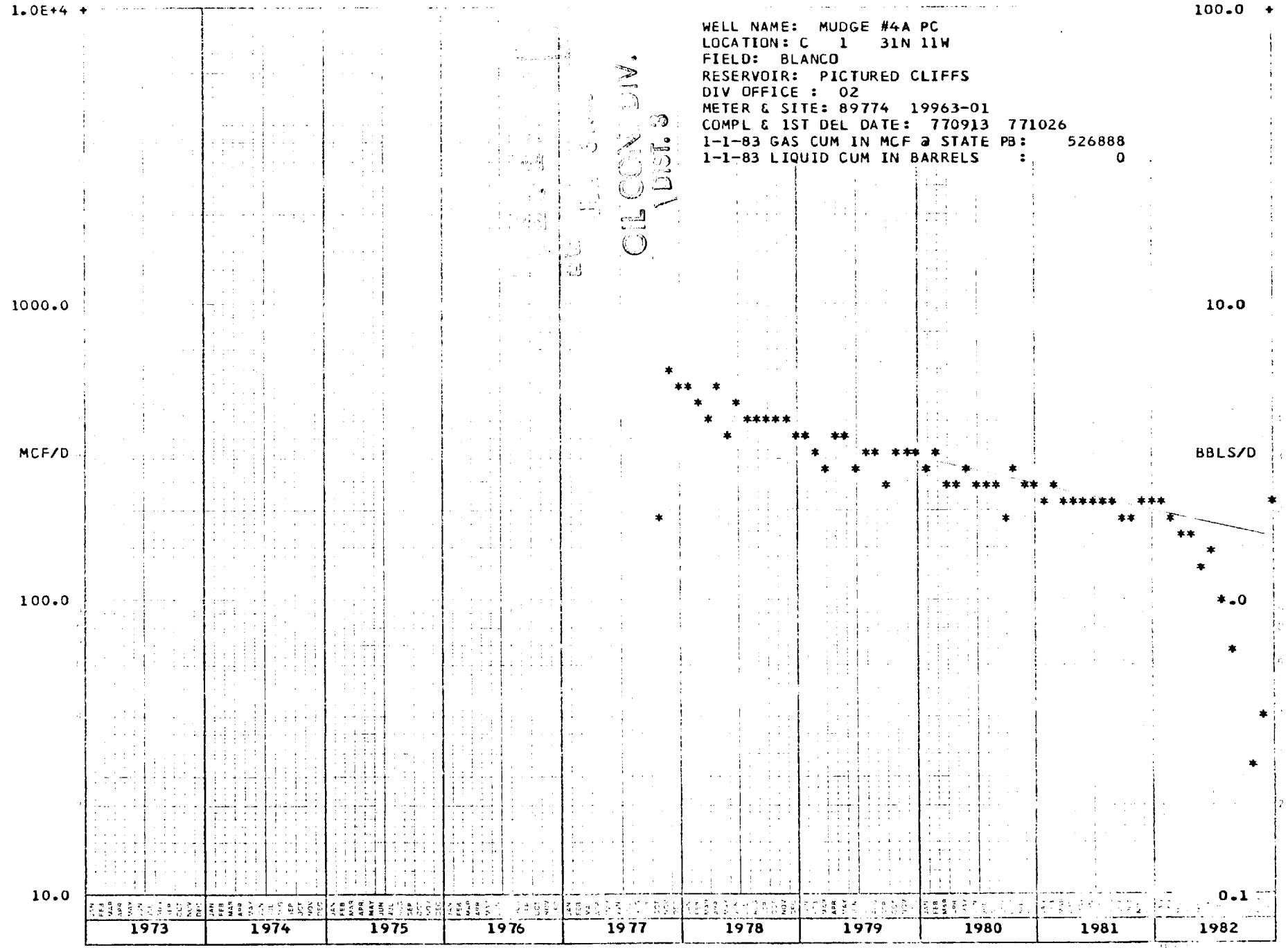
*=GAS,O=LIQUID,@=BOTH

EL PASO NATURAL GAS CO



*=GAS,O=LIQUID,@=BOTH

EL PASO NATURAL GAS CO



OIL CON. DIV.
DIST. 3

NEW MEXICO OIL CONSERVATION COMMISSION

GAS – OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
El Paso Natural Gas Company	Blanco Mesa Verde/Pictured Cliffs	San Juan

Address

TYPE OF TEST – (X) Scheduled ☐ Completion ☐ Special [X]

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS – OIL RATIO CU.FT./BBL.
Mudge	4A (MV)	C	1	31	11	5-24-83	F				24	---	39.8	14.28	699	48950
Mudge	4A (PC)	C	1	31	11	Average 1982 daily production rate.	F				24	---	---	---	210	

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 allowables when authorized by the Commission.

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 Commission in accordance with Rule 301 and appropriate pool rules.

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

Loren W Fothergill
(Signature)

Sr. Production Engineer
(Title)

May 25, 1983
(Date)

El Paso Natural Gas Company

BOTTOM HOLE PRESSURE REPORT

Form 23-85 (Rev. 7-62)

Company: El Paso Natural Gas			Date: May 17, 1983	
Well Name: Mudge		Well No.: 4-A (MV)	Location: NW/4, Sec. 1, T-31-N, R-11-W	
County: San Juan County	State: New Mexico		Status of Well: Shut in 7 days	
Field: Blanco		Pay Zone: Mesa Verde	Top: 4688 ft.	Bottom: 5659 ft.
Tubing: 2 3/8"	Depth: 5552 ft.	Down Hole Equipment	@	ft.
Casing	Depth: ft.	Liner: 4½"	From: 3274 ft.	To: 5767 ft.
Tree Connection *(Size Thread, Flow Tee, etc.)*				

DEPTH FEET	PRESS. PSIG.	PRESS. GRADIENT lbs./ft.
Lube	498	
1000	511	.013
2000	525	.014
2500	533	.016
5000	565	.0133
5250	567	.008
5551	575	.027

Casing Press. (DWT)	---		Psig.
Tubing Press. (DWT)	504		Psig.
Oil Level	---		ft.
Water Level	---		ft.
Days Shut In	7	Flowing	
Temp. @	5551 Ft.	162	°F
Elevation KB	Ft. Ground	6337	ft.
Last Test Date			
Press. Last Test			Psig.
B.H.P. Change	Psi in		Days
Pressure Loss			Psi/Day
Instrument	RPG	No. 12161 N	
Run By	Goodwin		
Calibration No.			
Calculated By	L. W. Fothergill		

Remarks and/or Calculations