

# El Paso Natural Gas Company

El Paso, Texas

April 4, 1957

DIRECT REPLY TO:  
P. O. BOX 997  
FARMINGTON, NEW MEXICO



Mr. A. L. Porter  
Secretary and Director  
Oil Conservation Commission  
Box 871  
Santa Fe, New Mexico

Dear Sir:

This is to request administrative approval of a well dually completed in the Blanco-Mesa Verde and South Blanco Pictured Cliffs Extension Pools. The El Paso Natural Gas Company San Juan 28-6 Unit No. 70 (PM) is located 993 feet from the South line, 990 feet from the West line, Section 25, Township 27 North, Range 6 West, N.M.P.M., Rio Arriba County, New Mexico. This well is completed in the Point Lookout and Cliff House members of the Mesa Verde formation and in the Pictured Cliffs formation. Completion has been accomplished in the following manner:

1. 10-3/4" surface casing set at 172' with 125 sacks of cement circulated to surface.
2. 7-5/8" intermediate casing set at 3383' with 250 sacks of cement.
3. 5-1/2" liner set from 3318' to 5569' with 300 sacks of cement.
4. Protection of the Pictured Cliffs formation was accomplished by circulating cement behind 7-5/8" casing before perforating. The casing and liner were both tested for leaks. None were found.
5. The Point Lookout formation was perforated with 4 intervals and the Cliff House formation was perforated with 4 intervals and sand-water fraced through the 5-1/2" liner.
6. The Pictured Cliffs formation was perforated with 2 intervals and sand-water fraced through the 7-5/8" casing.
7. After cleaning out both formations a 2" EUE tubing was run with a Baker Model "EGJ" production packer to separate the Mesa Verde and Pictured Cliffs formations. The Mesa Verde formation will be produced through the 2" tubing.
8. The Pictured Cliffs formation will be produced through the 7-5/8" casing. A syphon string consisting of 1-1/4" line pipe was run to a point opposite the Pictured Cliffs formation.

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9. A Garrett circulating sleeve was installed in the 2" tubing string just below the Pictured Cliffs perforation. This sleeve will enable bottom hole pressure surveys to be taken if they are required at a future date.
10. Initial potential tests have been run and commercial production has been found from both zones. Also a packer leakage test has been run and witnessed by the Aztec Oil Conservation Commission office. This test shows no communication in the well bore between the two producing formations.

Administrative approval is asked for this dual completion to allow production from both known producing formations without the high initial cost of drilling two wells.

Since El Paso Natural Gas Company is the operator of the San Juan 28-6 Unit the approval of any other operators has not been sought. I am enclosing:

- (a) Two copies of the schematic diagram of the mechanical installations.
- (b) Two copies of an affidavit from the packer setting company stating that the packer used was set at the depth shown.
- (c) Two copies of the packer leakage tests as observed by a member of the Oil Conservation Commission.
- (d) Two copies of the initial potential test showing commercial production in these zones.

It is intended to dedicate the W/2 of Section 25 to the Mesa Verde production and the SW/4 of Section 25 to the Pictured Cliffs production.

Any further information required will be furnished upon your request. Thank you for your consideration of this matter.

Yours very truly,

ORIGINAL SIGNED E. J. COEL

E. J. Coel  
Senior Petroleum Engineer

EJC/gas

CC: Emery Arnold ✓  
R. L. Hamblin  
Phil McGrath

EL PASO NATURAL GAS COMPANY

P. O. Box 997  
Farmington, N.M.

March 27, 1957

Mr. E. C. Arnold  
Oil Conservation Committee  
120 East Chaco  
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso Natural  
Gas Company Well, San Juan 28-6 Unit # 70,  
SW 25-27-6, Rio Arriba County, New Mexico.

Dear Mr. Arnold:

This well was dually completed in the Pictured Cliffs and Mesa Verde zones. A packer was set at 3366 feet. The Pictured Cliffs zone was tested March 15, 1957 with the following results obtained.

Pictured Cliffs SIPC - 1000 psig (shut-in 12 days)  
Pictured Cliffs SIPT - 1000 psig  
Mesa Verde SIPT - 1059 psig

The casing was opened at 10:40 A.M. through a 3/4" choke and was left open for three hours.

<u>Time</u>	<u>Casing Choke Pressure Psig</u>	<u>Temp. °F</u>	<u>Tubing Pressure Psig</u>
10:40	Opened casing		1059
10:55	648		1060
11:10	541		1061
11:25	508		1061
11:40	481		1062
12:10	442		1062
12:40	404		1062
1:10	353		1062
1:40	325	67	1062

The calculated choke volume was 4695 MCF/D. After the well was shut-in 10 days, the Mesa Verde zone was tested March 26, 1957 with the following results obtained:

Pictured Cliffs SIPC - 1024 psig  
Mesa Verde SIPT - 1072 psig (shut-in 23 days)

The tubing was opened at 11:20 A.M. through a 3/4" choke and was left open for three hours.

<u>Time</u>	<u>Tubing Choke Pressure Psig</u>	<u>Temp. °F</u>	<u>Casing Pressure Psig</u>
11:20	Opened tubing		1024
11:35	557		1027
11:50	530		1028
12:05	488		1028
12:20	457		1028
12:50	433		1027
1:20	390		1027
1:50	377		1027
2:20	362	58	1027

The calculated choke volume was 4519 MCF/D. The results of the data obtained during the tests indicate there is no packer leakage.

Very truly yours,

*K.C.M. McBride*  
K. C. McBride  
 Gas Engineer

KCMCB/jla

cc: E. E. Alsup  
 D. H. Tucker  
 W. T. Hollis  
 W. M. Rodgers  
 Drilling Department  
 B. D. Adams  
 Roland Hamblin  
 Jack Purvis  
 W. V. Holik  
 C. C. Kennedy  
 E. J. Coel, Jr. (6)  
 A. J. Dudenhoeffer  
 Bill Parrish  
 H. H. Lines  
 Dean Rittmann  
 File

EL PASO NATURAL GAS COMPANY  
OPEN FLOW TEST DATADUAL COMPLETIONDATE **March 26, 1957**

Operator <b>El Paso Natural Gas Company</b>		Lease <b>San Juan 28-6 Unit # 70</b>	
Location <b>993'S, 990'W, Sec. 25-27-6</b>		County <b>Rio Arriba</b>	State <b>New Mexico</b>
Formation <b>Mesa Verde</b>		Pool <b>Blanco</b>	
Casing Diameter <b>7 5/8</b>	Set At: Feet <b>3371</b>	Tubing Diameter <b>2"</b>	Set At: Feet <b>5229</b>
Pay Zone: From <b>4908</b>	To <b>5506</b>	Total Depth <b>5570 - c/o - 5525</b>	
Stimulation Method <b>Sand Water Frac</b>		Flow Through Casing	Flow Through Tubing <b>X</b>

Choke Size, Inches <b>.750</b>	Choke Constant: C <b>12.365</b>	<b>5 1/2" liner at 5569</b>	
Shut-In Pressure, Casing, PSIG <b>1024 PC</b>	PSIG - 12 - PSIA <b>23</b>	Shut-In Pressure, Tubing, PSIG <b>1072</b>	PSIG - 12 - PSIA <b>1084</b>
Flowing Pressure: P, PSIG <b>362</b>	PSIG - 12 - PSIA <b>374</b>	Working Pressure: P <sub>w</sub> , PSIG <b>Calculated</b>	PSIG - 12 - PSIA <b>746</b>
Temperature: T, F <b>58</b>	F <b>.75</b>	F <sub>pv</sub> (From Tables) <b>1.046</b>	Gravity <b>.693</b>

CHOKE VOLUME  $Q = C \times P_c \times F_c \times F_g \times F_{pv}$ 

$$Q = 12.365 \times 374 \times 1.0019 \times .9325 \times 1.046 = 4519 \text{ MCF/D}$$

$$\text{OPEN FLOW } A_{of} = C \left( \frac{P_c^2}{P_c - P_w} \right)^n$$

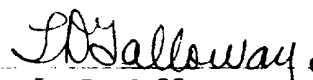
$$A_{of} = \left( \frac{1,175,056}{618,540} \right)^n (1.8997)^{.75} \times 4519 = 1.617 \times 4519$$

$$A_{of} = 7307 \text{ MCF/D}$$

K. C. McBride

WITNESSED BY

cc: E. J. Coel, Jr. (6)

  
 L. D. Galloway

EL PASO NATURAL GAS COMPANY  
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE March 15, 1957

Operator <b>El Paso Natural Gas Company</b>		Lease <b>San Juan 28-6 Unit # 70</b>	
Location <b>993'S, 990'W, Sec. 25-27-6</b>		County <b>Rio Arriba</b>	State <b>New Mexico</b>
Formation <b>Pictured Cliffs</b>		Pool <b>Wildcat</b>	
Casing: Diameter <b>5½</b>	Set At: Feet <b>5569</b>	Tubing: Diameter <b>1¼</b>	Set At: Feet <b>3237</b>
Pay Zone: From <b>3212</b>	To <b>3256</b>	Total Depth <b>5570 - c/o - 5525. Packer at 3366</b>	
Stimulation Method <b>Sand Water Frac</b>		Flow Through Casing <b>X</b>	Flow Through Tubing

Choke Size, Inches <b>0.75</b>		Choke Constant: C <b>14.1605</b>	
Shut-In Pressure, Casing, PSIG <b>1000</b>	12 = PSIA <b>1012</b>	Days Shut-In <b>12</b>	Shut-In Pressure, Tubing, PSIG <b>1000</b>
Flowing Pressure, P, PSIG <b>325</b>	12 = PSIA <b>337</b>		Working Pressure: Pw, PSIG <b>334</b>
Temperature: T, F <b>67</b>			Gravity <b>.650</b>
			Fpv (From Tables) <b>1.031</b>

SIPT (Mesa Verde) - 1059 psig

CHOKE VOLUME  $Q = C \times P_c \times F_c \times F_g \times F_{ov}$

$$Q = 14.1605 \times 337 \times .9933 \times .9608 \times 1.031 = 4695 \text{ MCF/D}$$

$$\text{OPEN FLOW } A_{of} = Q \left( \frac{P_c^2}{P_c^2 - P_w^2} \right)^n$$

$$A_{of} = \left( \frac{1,024,144}{904,428} \right)^n (1.1323)^{.85} \times 4695 = 1.1113 \times 4695$$

$$A_{of} = 5218 \text{ MCF/D}$$

TESTED BY K. C. McBride

WITNESSED BY \_\_\_\_\_

cc: E. J. Coel, Jr. (6)

*L. D. Galloway*  
L. D. Galloway

EL PASO NATURAL GAS COMPANY  
GAS WELL TEST

To: Mr. E. E. Alsup

Date: March 15, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,  
SAN JUAN 28-6 UNIT # 70, Rio Arriba County, N.M.

Tested By: K. C. McBride

Location ..... Sec. 25 T. 27 R. 6 .993'S, 990'W

Shut-In Pressure .....	Pictured Cliffs	SIPT	1000	psig	12	days
	Pictured Cliffs	SIPT	1000	psig		
	Mesa Verde	SIPT	1059	psig		

0.750" Choke Volume .....	4695	MCF/D @ 14.7 psia and 60° F. for 0.6
		gravity gas. Flow through casing for 3 hours.

Calculated 3 Hour Absolute Open Flow .....	5218	MCF/D
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Working Pressure On tubing .....	=	334	Psig
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Producing Formation .....	Pictured Cliffs
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Stimulation Method .....	Sand Water Frac
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Total Depth .....	5570 - c/o - 5525. Packer at 3366
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Field .....	Wildcat
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H <sub>2</sub> S .....	Sweet to lead acetate.
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Final SIPT (Mesa Verde) - 1062 psig

cc: D. H. Tucker

H. H. Lines

~~W. T. Hollis~~

Bill Parrish

W. T. Hollis

Dean Rittmann

~~W. M. Rodgers~~

W. M. Rodgers

~~W. V. Holik~~

Drilling Department

B. D. Adams

Roland Hamblin

Jack Purvis

W. V. Holik

C. C. Kennedy

E. J. Coal, Jr. (6)

A. J. Dudenhoeffer

File

*Lewis D. Galloway*  
L. D. Galloway

EL PASO NATURAL GAS COMPANY  
GAS WELL TEST

To: Mr. E. E. Alsup

Date: March 26, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,  
SAN JUAN 28-6 UNIT # 70, Rio Arriba County, New Mexico.

Tested By: E. C. McBride

Location ..... Sec. 25 T. 27 R. 6 , 993'S, 990'W

Shut-In Pressure ..... PC 1024 psig ; (Shut-in 23 days)  
MV 1072 psig0.750" Choke Volume ..... 4519 MCF/D @ 14.7 psia and 60° F. for 0.6  
gravity gas. Flow through tubing for 3 hours.

Calculated 3 Hour Absolute Open Flow ..... 7307 MCF/D

Working Pressure On ..... Calculated 734 Psig

Producing Formation ..... Mesa Verde

Stimulation Method ..... Sand Water Frac

Total Depth ..... 5570 - c/o - 5525

Field ..... Blanco

H<sub>2</sub>S ..... Sweet to lead acetate.

cc: D. H. Tucker

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W. T. Hollis

\*\*\*\*\*

W. M. Rodgers

\*\*\*\*\*

Drilling Department

B. D. Adams

Roland Hamblin

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Bill Parrish

Dean Rittmann

*Lewis D. Galloway*  
L. D. Galloway



STATE OF NEW MEXICO        )  
                                      )  
COUNTY OF SAN JUAN        )

I, Mack M. Mahaffy, being first duly sworn upon my oath depose  
and say as follows:

I am an employee of Baker Oil Tools, Inc., and that on March 2, 1957,  
I was called to the location of the El Paso Natural Gas Company San Juan  
28-6-70 (PM) Well located in the SW/4 of Section 25, Township 27 North,  
Range 6 West, N.M.P.M. for the purpose of installing a production packer.  
Under my direct supervision a Baker Model "EGJ" production packer was set  
at 3300 feet. The production packer was properly set in accordance with  
the usual practices and customs of the industry.

Mack M. Mahaffy  
Mack M. Mahaffy

Subscribed and sworn to before me, a Notary Public in and for San Juan  
County, New Mexico, the 2nd day of April, 1957.

Paul MacLach  
Notary Public in and for San Juan County,  
New Mexico

My commission expires:

Apr. 24, 1960

SCHEMATIC DIAGRAM OF DUAL COMPLETION  
EPNG SAN JUAN 28-6 UNIT NO. 70 (PM)  
(SW Section 25-27N-6W)

Measurement reference point is  
10.80' above top flange of tubing  
hanger

