

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 Aztec Pictured Cliffs Extension Pools. The El Paso Natural Gas Company Bruington Pool Unit No. 3 (PM) is located 800 feet from the East line, 1650 feet from the South line, ~~Section 6~~, Township 30 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. This well is completed in the Point Lookout member 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 150 sacks of cement circulated to surface.
2. 7" intermediate casing set at 4535' with 300 sacks of cement.
3. 5-1/2" liner set from 4451' to 4771' with 60 sacks of cement.
4. Protection of the Pictured Cliffs formation was accomplished by circulating cement behind 7" 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 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" 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" casing. A syphon string consisting of 1-1/4" line pipe was run to a point opposite the Pictured Cliffs formation.

COPY

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.

The offset operators of the dual completion have been notified and I am enclosing a copy of a letter and a copy of a telegram waiving any objections to it. Also enclosed are:

- (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.
- (e) Two copies of plats showing location of this well and offset operators.

It is intended to dedicate the E/2 of Section 6 to the Mesa Verde production and the SE/4 of Section 6 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/gks

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

EL PASO NATURAL GAS COMPANY
GAS WELL TESTTo: Mr. E. E. Alsup
From: Gas Engineering DepartmentDate: March 13, 1957
Place: Farmington, New MexicoDUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
BRUINGTON POOL UNIT # 3, San Juan County, New Mexico.

Tested By: R. A. Ullrich

Location Sec. 6 T. 30 R. 11 .1625'S, 800'E

Shut-In Pressure P.C. SIPC 665 psig 18 days
SIPT 1031 psig ; (Shut-in days)0.750" Choke Volume 3577 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 4566 MCF/D

Working Pressure On calculated = 538 Psig

Producing Formation Mesa Verde

Stimulation Method Sand Water Frac

Total Depth 4808 - c/o - 4710. Packer set at 4491

Field Blanco

H₂S Sweet to lead acetate.

cc: D. H. Tucker

~~W. T. Hollis~~

W. T. Hollis

~~W. M. Rodgers~~

W. M. Rodgers

~~W. J. Chubb~~

Drilling Department

B. D. Adams

Roland Hamblin

Jack Purvis

W. V. Holik

C. C. Kennedy

A. J. Chubb, Jr. (6)

A. J. Chubb

File

H. H. Lines
Bill Parrish
Dean Rittmann*L. D. Galloway*
L. D. GallowayBy: *L. C. McBride*

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup
From: Gas Engineering Department

Date: March 6, 1957
Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well,
FARMINGTON POOL UNIT # 3, San Juan County, New Mexico.

Tested By: R. A. Ullrich

Location Sec. 6 T. 30 R. 11 1625'S, 800'E

Shut-In Pressure SIPC 656 psig
SIPT 656 psig ; (Shut-in 11 days)

750" Choke Volume 1024 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 1036 MCF/D

Working Pressure On tubing 68 Psig

Producing Formation Pictured Cliffs

Simulation Method Sand Water Frac

Total Depth 4808 - c/o - 4710. Packer set at 4491

Well Wildcat

Gravel Sweet to lead acetate.

Pressure on 2" tubing - Mesa Verde - 1013 psig

D. H. Tucker

H. H. Lines

Bill Parrish

~~Dean Rittmann~~

Dean Rittmann

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.

A. J. Dudenhoeffer

File

(6)

By:

L. D. Galloway
L. D. Galloway

L. P. McBride

EL PASO NATURAL GAS COMPANY

Box 997
Farmington, N.M.

March 14, 1957

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

Re: Packer Leakage Test on El Paso Natural Gas
Company Well, Bruington Pool Unit # 3, SE
6-30-11, San Juan County, New Mexico

Dear Mr. Arnold:

This well was dually completed in the Pictured Cliffs and Mesa Verde formations. A production packer was set at 4491 feet. The Pictured Cliffs zone was tested March 6, 1957 and the following information was obtained:

SIPC and SIPT (Pictured Cliffs) - 656 psig; shut-in 11 days.
SIPT (Mesa Verde) - 1013 psig

The three hour open flow test through a 3/4" choke started at 10:00 A.M.

Time	Casing Choke Pressure Psig	Tubing Pressure Psig (Mesa Verde)	Temp. °F
10:00	656	1013	
10:15	252	1013	
10:30	161	1013	
10:45	126	1013	
11:00	106	1013	
11:30	88	1013	
12:00	75	1013	
12:30	69	1013	
1:00	63	1013	58

The calculated choke volume was 1024 MCF/day. The absolute open flow was 1036 MCF/day.

On March 13, 1957 the Mesa Verde zone was tested and the following information was obtained:

SIPC and SIPT (Pictured Cliffs) - 665 psig
SIPT (Mesa Verde) - 1031 psig; shut-in 18 days.

The three hour open flow test period, through a 3/4" choke, was started at 12:10 P.M.

<u>Time</u>	<u>Casing Pressure Psig (Pictured Cliffs)</u>	<u>Choke Pressure Tubing (Mesa Verde)</u>	<u>Temp. °F</u>
12:10	665	1031	
12:25	666	384	
12:40	665	359	
12:55	664	323	
1:10	663	308	
1:40	662	288	
2:10	662	264	
2:40	661	253	
3:10	660	249	53

The calculated choke volume was 3577 MCF/day.

Yours truly,


 R. A. Ullrich
 Gas Engineer

RAU/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 COMPLETION

DATE March 6, 1957

Operator El Paso Natural Gas Company		Lease Bruington Pool Unit # 3	
Location 1625'S, 800'E, Sec. 6-30-11		County San Juan	State New Mexico
Formation Pictured Cliffs		Pool Wildcat	
Casing: Diameter 7	Set At: Feet 4535	Tubing: Diameter 1 1/4	Set At: Feet 2347
Per. Zone: From 2329		Total Depth: 4808 - c/o - 4710 - Packer @ 4491	
Stimulation Method Sand Water		Flow Through Casing X	Flow Through Tubing

Choke Size, inches 0.75		Choke Constant: C 14.1605	
Shut-In Pressure, Casing, PSIG 656	PSIA 678	Days Shut-In 11	Shut-In Pressure, Tubing, PSIG 656
Flowing Pressure: P, PSIG 63	PSIA 75		Working Pressure: Pw, PSIG 68
Temperature, °F 58			Gravity .660
			Fpv (From Tables) 1.009

SIPT (MV) - 1013

CHOKE VOLUME $Q = C \times P \times F \times F_p \times F_{pv}$

$$Q = 14.1605 \times 75 \times 1.0019 \times .9535 \times 1.009 = 1024 \text{ MCF/D}$$

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

$$A_{of} = \left(\frac{459,684}{453,284} \right)^n (1.0141)^{.85} \times 1024 = 1.0120$$

$$A_{of} = 1036 \text{ MCF/D}$$

TESTED BY R. A. Ullrich

WITNESSED BY

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

By:

L. D. GallowayL. D. Galloway
L. D. Galloway

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE March 13, 1957

Operator El Paso Natural Gas Company		Lease Bruington Pool Unit # 3	
Location 1625'S, 800'E, Sec. 6-30-11		County San Juan	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing Diameter 5½	Set At: Feet 4808	Tubing Diameter 2	Set At: Feet 4640
Pay Zone: From 4538	To 4692	Total Depth: 4808 c/o - 4710. Packer @ 4491	
Stimulation Method Sand Water Frac		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches 0.75	Choke Constant: C 14.1605		
Shut-In Pressure, Casing Pictured Cliffs	PSIG	12 - PSIA	Days Shut-In 18
			Shut-In Pressure, Tubing 1031
Flowing Pressure: P 249	PSIG	12 - PSIA	Working Pressure: P _w Calculated
			PSIG
Temperature: T 53	F		Gravity .690
			F _{pv} (From Tables) 1.031

SIPC and SIPT - Pictured Cliffs - 665 psig

CHOKE VOLUME $Q = C \times P_r \times F_p \times F_g \times F_{pv}$

$$Q = 14.1605 \times 261 \times 1.0068 \times .9325 \times 1.031 = 3577 \text{ MCF/D}$$

$$Q_{OF} = A_{of} \left(\frac{P_r^2 - P_w^2}{P_e - P_w} \right)^n$$

$$A_{of} = \left(\frac{1,087,849}{785,349} \right)^n (1.3851)^{.75} \times 3577 = 1.2765 \times 3577$$

$$A_{of} = 4566 \text{ MCF/D}$$

R. A. Ullrich

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

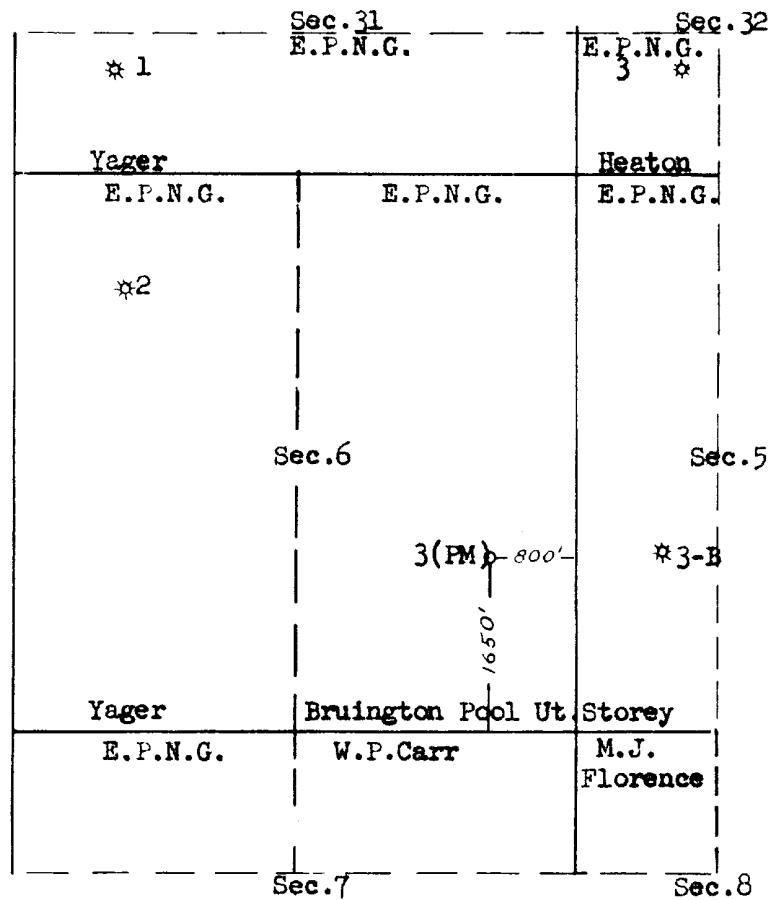
By:

L. D. Galloway

L. D. Galloway

PLAT SHOWING LOCATION OF DUAL COMPLETED
EL PASO NATURAL GAS BRUINGTON POOL UNIT #3 (PM)
AND OFFSET ACREAGE

T-30-N R-11-W



EL PASO NATURAL GAS COMPANY
EL PASO, TEXAS

SCALE

DATE

No.

DRAWN BY

CHECKED BY

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 February 23,
1957, I was called to the location of the El Paso Natural Gas Company
Bruington Pool Unit No. 3 (FM) Well located in the SE/4 of Section 6,
Township 30 North, Range 11 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 4490 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 _____ day of _____, 1957.

Paul S. Macchale
Notary Public in and for San Juan County,
New Mexico

My commission expires:

SCHEMATIC DIAGRAM OF DUAL COMPLETION
 EPNG BRUINGTON POOL UNIT NO. 3 (PM)
 (SE Section 6 - T30N R11W)

Measurement Reference point is
 10' above top flange of tubing hanger.

