El Paso Natural Gas Company

El Paso, Texas
June 18, 1958

ADDRESS REPLY TO:
POST OFFICE 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 a request for administrative approval for a well dually completed in Blanco Mesa Verde and Wildcat Pictured Cliffs Pools. The El Paso Natural Gas Company San Juan 27-5 Unit No. 29 (PM) is located 990 feet from the South line and 990 feet from the West line of Section 13, Township 27 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico.

This well has been completed in the Point Lookout section 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 173 feet with 150 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 3624 feet with 150 sacks of cement. Top of the cement is at 2750 feet, which is above the top of the Pictured Cliffs at 3433 feet.
3. 5 1/2" liner set from 3577 feet to 5808 feet with 300 sacks of cement.
4. The casing and liner were tested for leaks before perforating.
5. The Point Lookout section was perforated in six intervals and fractured with water and sand.
6. The Pictured Cliffs formation was perforated in two intervals and fractured with water and sand.
7. All perforations were cleaned out after treatment and completion was accomplished by setting a Baker Model "EGJ" production packer on 2"EUE tubing at 3638 feet with tubing perforations set opposite the Point Lookout perforations. 1 1/4" EUE tubing siphon string was run with tubing perforations set opposite the Pictured Cliffs perforations. The Point Lookout gas will be produced through the 2" tubing and the Pictured Cliffs gas through the casing.
8. Initial potential tests have been run and commercial production has been found in both zones. A packer leakage test has been run and witnessed by a member of the Aztec office of the Oil Conservation Commission. This test shows no communication in the well bore between the two producing formations.

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Administrative approval is requested for the dual completion to allow production from both known producing formations, eliminating the high initial cost of drilling two separate wells.

Since El Paso Natural Gas Company is the operator of the SanJuan 27-5 Unit, approval to dually complete this well has not been sought from any other operator. Enclosed are:

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

It is intended to dedicate the W/2 of Section 13, Township 27 North, Range 5 West to the Mesa Verde formation and the SW/4 of Section 13, Township 27 North, Range 5 West to the Pictured Cliffs formation.

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

Yours very truly,

ORIGINAL SIGNED E. S. OBERLY

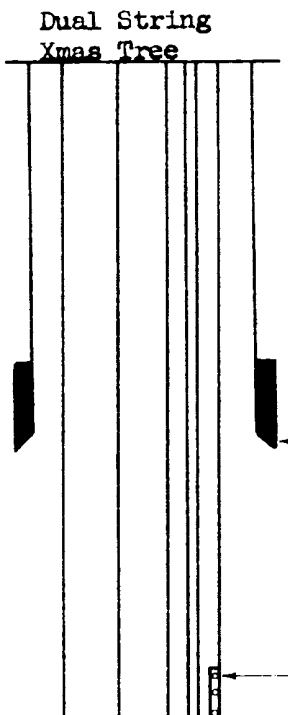
E. S. Oberly,
Division Petroleum Engineer

ESO:dgb
Encl.
cc: NMOCC (Emery Arnold)
Sam Smith
USGS (Phil McGrath)

SCHEMATIC DIAGRAM OF DUAL COMPLETION

El Paso Natural Gas Co. San Juan 27-5 Unit No. 29 (PM)

SW/4 Section 13, T-27-N, R-5-W



Zero reference point 10.0' above top flange of tubing hanger

10 3/4", 32.75# S. W. casing set at 173' with 150 sacks cement circulated to surface.

Pictured Cliffs perforations 3456-74; 3482-3510 (2 SPF); fractured with water and sand.

1 1/4" EUE, 2.4# J-55 tubing landed at 3514' as siphon string.

Top of liner hanger at 3577'.

7 5/8", 26.40# J-55 casing set at 3624' with 150 sacks cement.

Baker "EGJ" Production Packer set at 3638'.

Point Lookout perforations 5550-62; 5578-5600; 5614-36; 5648-74; 5686-5710; 5730-50 (1 SPF); fractured with water and sand.

2" EUE, 4.7#, J-55 tubing landed at 5671', with tubing perforations at 5635'-38'.

5 1/2", 15.50#, J-55 liner set from 3577' to 5808' with 300 sacks cement.

T.D. 5812'

STATE OF NEW MEXICO)
)
COUNTY OF SAN JUAN)

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

I am an employee of Baker Oil Tools, Inc., and that on May 8, 1958, I was called to the location of the El Paso Natural Gas Company San Juan 27-5 Unit No. 29 (PM) Well located in the SWSW/4 of Section 13, Township 27 North, Range 5 West, N.M.P.M., for advisory service in connection with installation of a production packer. In my presence, a Baker Model "EGJ" Production Packer was set in this well at 3638 feet in accordance with the usual practices and customs of the industry.

Mack M. Mahaffey

Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 17th day of June, 1958.

Notary Public in and for San Juan County, New Mexico

My commission expires February 24, 1960.

EL PASO NATURAL GAS COMPANY

P. O. Box 997
Farmington, New Mexico

June 5, 1958

Mr. E. C. Arnold
1000 Rio Brazos Road
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso Natural Gas Company Well, San Juan 27-5 Unit 29 (PM), 990S, 990W; 13-27-5; Rio Arriba County, New Mexico.

Dear Mr. Arnold:

The subject well was dually completed in the Pictured Cliffs and Mesa Verde zones and a packer was set at 3638 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours May 29, 1958, with the following data obtained:

PC SIPC 998 psig; Shut-in 20 days

PC SIPT 999 psig;

MV SIPT 1105 psig; Shut-in 20 days

Time Minutes	MV Flowing Pressure Tubing Psig	PC SIPC Psig	MV Working Pressure, Psig	Temp ° F
0	-	998		-
15	532	1003		64
30	395	1003		65
45	352	1003		66
60	332	1003		66
180	249	1003	Calc. 510	67

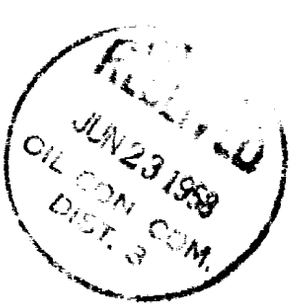
The choke volume for the Mesa Verde was 3101 MCF/D with an AOF of 3731 MCF/D.

The Pictured Cliffs zone was tested June 5, 1958 with a 3/4" choke for 3 hours with the following data obtained:

PC SIPC 1012 psig; Shut-in 27 days

PC SIPT 1013 psig;

MV SIPT 1091 psig; Shut-in 7 days



Time Minutes	PC Flowing Pressure Casing Psig	MV SIPT Psig	PC Working Pressure, Psig	Temp ° F
0	-	1091		-
15	422	1091		61
30	303	1091		63
45	245	1092		64
60	212	1092		67
130	131	1092	Tbg. 137	66

The choke volume for the Pictured Cliffs test was 1687 MCF/D with an AOF of 1718 MCF/D.

The results of the above tests indicate there is no packer leakage.

Very truly yours,

Frank M. Clark

Frank Clark
Gas Technician

FC/nb

cc: W. M. Rodgers
E. S. Oberly (6)
File

EL PASO NATURAL GAS COMPANY

OPEN FLOW TEST DATA

DUAL COMPLETION DATE May 29, 1958

Operator: El Paso Natural Gas		Lease: San Juan 27-5 Unit 29 (M)	
Location: 990S, 990W, 13-27-5		County: Rio Arriba	State: New Mexico
Formation: Mesa Verde		Pool: Blanco	
Casing: Diameter: 7-5/8	Set At: Feet: 3614	Tubing: Diameter: 2	Set At: Feet: 5661
Pay Zone: From: 5550	To: 5750	Total Depth: 5764	Shut-in 5/9/58
Stimulation Method: Sand Water Frac		Flow Through: Casing	Flow Through: Tubing: X

Choke Size, inches: 3/4	Choke Constant: C: 12.365	5-1/2 liner 3577 - 5808	
Shut-in Pressure, Casing: PSIG: 998 (PC)	+ 12 = PSIA: 1010	Days Shut-in: 20	Shut-in Pressure, Tubing: PSIG: 1105 (MV) + 12 = PSIA: 1117
Flowing Pressure: P: PSIG: 249	+ 12 = PSIA: 261		Working Pressure: P_w: PSIG: Calculated + 12 = PSIA: 522
Temperature: T: 67	n: .75	Fpv (From Tables): 1.026	Gravity: .675

Final SIPC (PC) 1003

Packer at 3638
1-1/4" at 3504

CHOKE VOLUME: $Q = C \times P_t \times F_t \times F_g \times F_{pv}$

$Q = 12.365 \times 261 \times .9933 \times .9427 \times 1.026 = 3{,}101$ MCF/D

OPEN FLOW: $Aof = Q \left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$

$Aof = \left(\frac{1247689}{975205} \right)^n \quad 1.2794^{.75} (3{,}101) = 1.2030 (3{,}101)$

$Aof = 3{,}731$ MCF/D

RECEIVED
JUN 23
OIL CON.

M. W. Rischard

Lewis D. Galloway.
L. D. Galloway

EL PASO NATURAL GAS COMPANY

OPEN FLOW TEST DATA

DUAL COMPLETION DATE June 5, 1958

Operator: El Paso Natural Gas Co.		Lease: San Juan 27-5 Unit 29 (P)	
Location: 990S, 990W, 13-27-5		County: Rio Arriba	State: New Mexico
Formation: Pictured Cliffs		Pool: Undesignated	
Casing: Diameter: 7-5/8	Set At: Feet: 3614	Tubing: Diameter: 1-1/4	Set At: Feet: 3504
Pay Zone: From: 3456	To: 3510	Total Depth: 5808 c/o 5764	Shut-in 5/9/58
Stimulation Method: Sand Water Frac		Flow Through Casing: X	Flow Through Tubing

Choke Size, Inches: .75	Choke Constant: C: 12.365	5-1/2" liner 3577 - 5808	
Shut-in Pressure, Casing: PSIG: 1012 (PC)	+ 12 = PSIA: 1024	Days Shut-in: 27 (PC)	Shut-in Pressure, Tubing: PSIG: 1013 (PC) + 12 = PSIA: 1025
Flowing Pressure: P: PSIG: 131	+ 12 = PSIA: 143		Working Pressure: P_w: PSIG: 137 + 12 = PSIA: 149
Temperature: T: F: 66	Fpv (From Tables): .85		Gravity: 1.014 .670

Initial SIPT (MV) 1091 PSIG — 2" at 5661
Final SIPT (MV) 1092 PSIG — Packer at 3638

CHOKE VOLUME = Q = C x P_t x F_t x F_g x F_{pv}

Q = 12.365 x 143 x .9943 x .9463 x 1.014 = 1687 MCF/D

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

Aof $\left(\frac{1050625}{1028424} \right)^{.85}$ $1.0215^{.85}$ x 1687 = 1.0182 x 1687 =

Aof 1718 MCF/D

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TESTED BY: Frank M. Clark

WITNESSED BY: Fred Cook N.M.O.C.C.

Checked By: S. V. Roberts

Lewis D. Galloway

L. D. Galloway