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 the Blanco Mesa Verde and Wildcat Pictured Cliffs Pools. The El Paso Natural Gas Company Russell No. 3 (PM) is located 890 feet from the South line and 1140 feet from the West line of Section 23, Township 28 North, Range 8 West, N.M.P.M., San Juan 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 2537 feet with 150 sacks of cement. Top of the cement is at 1500 feet, which is above the top of the Pictured Cliffs at 2336 feet.
3. 5 1/2" liner set from 2442 feet to 4799 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 three 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 2473 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.

COPY

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 holds all leases immediately adjacent to the drilling block, 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 23, Township 28 North, Range 8 West to the Mesa Verde formation and the SW/4 of Section 23, Township 28 North, Range 8 West to the Pictured Cliffs formation.

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

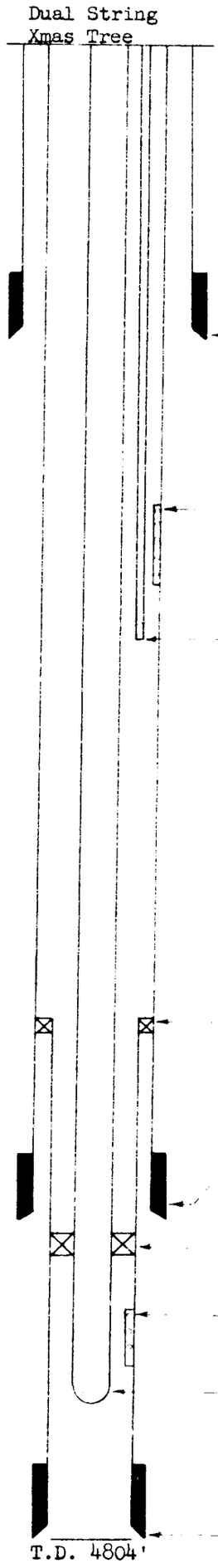
Yours very truly,

ORIGINAL SIGNED E. S. OBERLY

E. S. Oberly, Division
Petroleum Engineer

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

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. Russell No. 3 (PM)
SW/4 Section 23, T-28-N, R-8-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 the surface.

Pictured Cliffs perforations 2338-56; 2376-88; 2418-32 (2 SPF) fractured with water and sand.

1 1/4" EUE 2.4# J-55 tubing landed at 2427' as siphon string.

Top of liner hanger at 2442'.

7 5/8", 26.40# J-55 casing set at 2537' with 150 sacks cement.

Baker "EGJ" production packer set at 2473'.

Point Lookout perforations 4576-88; 4596-4614; 4620-36; 4644-58; 4672-96; 4710-26 (2 SPF); fractured with water and aand.

2" EUE, 4.7# J-55 tubing landed at 4715', with tubing perforations at 4680-4683'.

5 1/2", 15.50# J-55 liner set from 2442' to 4799' with 300 sacks cement.

STATE OF NEW MEXICO)
)
COUNTY OF SAN JUAN)

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

I am an employee of Baker Oil Tools, Inc., and that on April 26, 1956, I was called to the location of the El Paso Natural Gas Company Russell No. 3 (PM) Well located in the SWSW/4 of Section 23, Township 28 North, Range 8 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 2473 feet in accordance with the usual practices and customs of the industry.

Mack M. Manaffey

Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 17th day of June, 1956.

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 13, 1958

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

Re: Packer Leakage Test on the El Paso Natural Gas Company Well, Russell 3 (PM), 890S, 1140W, 23-28-8, San Juan 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 2473 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours June 1, 1958, with the following data obtained:

PC SIPC 1052 psig; Shut-in 35 days

MV SIPT 1064 psig; Shut-in 35 days

Time Minutes	MV Flowing Pressure Tubing Psig	PC SIPC Psig	Working Pressure, Psig	Temp ° F
15	470	1054		70
30	429	1054		72
45	387	1054		72
60	365	1054		72
120	-	-		-
180	279	1055	536 (Calc)	72

The choke volume for the Mesa Verde was 3531 MCF/D with an AOF of 4423 MCF/D.

The Pictured Cliffs zone was tested June 10, 1958 with a 3/4" choke for 3 hours with the following data obtained:

PC SIPC 1059 psig; Shut-in 44 days

PC SIPT 1060 psig;

MV SIPT 1057 psig; Shut-in 9 days

Time Minutes	PC Flowing Pressure Casing Psig	MV SIPT Psig	PC Working Pressure Tbg. Psig	Temp ° F
15	620	1059	643	64
30	435	1059	490	66
45	394	1059	410	66
60	356	1059	364	66
90	297	1059	307	67
120	277	1060	285	68
130	243	1060	251	68

The choke volume for the Pictured Cliffs test was 5087MCF/D with an AOF of 3254 MCF/D.

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

The PC test was witnessed by Mr. A. R. Kendrick, N.M.O.C.C., Aztec

Very truly yours,

R. R. Davis

R. R. Davis
Gas Engineer

RRD/nb

cc: W. M. Rodgers
W. S. Oberly
File

EL PASO NATURAL GAS COMPANY

OPEN FLOW TEST DATA

DUAL COMPLETION **CORRECTED COPY** DATE June 1, 1958

Operator: El Paso Natural Gas		Lease: Russel No. 3 (M)	
Location: 890S, 1140W, 23-28-8		County: San Juan	State: New Mexico
Formation: Mesa Verde		Pool: Blanco	
Casing: Diameter: 7-5/8	Set At: Feet: 2522	Tubing: Diameter: 2"	Set At: Feet: 4705
Pay Zone: From: 4576	To: 4696	Total Depth: 4756	Shut-in 4/27/58
Stimulation Method: Sand Water Frac		Flow Through: Casing	Flow Through: Tubing X

Choke Size, Inches: 3/4	Choke Constant: C 12.365		
Shut-in Pressure, Casing: PSIG 1052 (PC)	+ 12 = PSIA 1064	Days Shut-in 36	Shut-in Pressure, Tubing: PSIG 1064 (MV) + 12 = PSIA 1076
Flowing Pressure: P PSIG 279	+ 12 = PSIA 291		Working Pressure: P_w PSIG Calculated + 12 = PSIA 548
Temperature: T 72	n .75		Fpv (From Tables) 1.025 Gravity .640

Final Pressure SIPC (PC) = 1055 psig

Packer set at 2473
1-1/4" at 2417

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

Q = 12.365 x 291 x .9887 x .9682 x 1.025 = 3,531 MCF D

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

$\left(\frac{1157776}{857472}\right)^n$ $1.3502^{.75}$ (3531) = 1.2525 (3531)

Aof = 4,423 MCF D

M. W. Rischard

Lewis D. Galloway

L. D. Galloway

EL PASO NATURAL GAS COMPANY

OPEN FLOW TEST DATA

DUAL COMPLETION DATE **June 10, 1958**

Operator: **El Paso Natural Gas Company**		Lease: **Russell 3 (P)**	
Location: **890S, 1140W, 23-28-8**		County: **San Juan**	State: **New Mexico**
Formation: **Pictured Cliffs**		Pool: **Undesignated**	
Casing Diameter: **7-5/8**	Set At: Feet: **2522**	Tubing Diameter: **1-1/4**	Set At: Feet: **2417**
Pay Zone From: **2338**	To: **2432**	Total Depth: **4797 c/o 4756**	**Shut-in 4/27/58**
Stimulation Method: **Sand Water Frac**		Flow Through Casing: **X**	Flow Through Tubing

Choke Size, Inches: **.750**	Choke Constant: C **12.365**	**5-1/2" liner 2442 - 4797**	
Shut-in Pressure, Casing, PSIG: **(PC) 1059**	12 - PSIA: **1071** Days Shut-in: **44**	Shut-in Pressure, Tubing PSIG: **(PC) 1060**	12 - PSIA: **1072**
Flowing Pressure: P PSIG: **243**	12 - PSIA: **255**	Working Pressure: Pw PSIG: **251**	12 - PSIA: **263**
Temperature: T °F: **68**	Fa: **.850**	Fpv (From Tables): **1.023**	Gravity: **.646**

Initial SIPT (MV) = 1057 PSIG **Packer at 2473**
Final SIPT (MV) = 1060 PSIG **2" at 4705**

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

Q = 12.365 (255)(.9924)(.9645)(1.023) = **3087** MCF/D

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

AOF $\left(\frac{1,149,184}{1,080,015} \right)^n$ $(1.0640)^{.85}(3087) = (1.0542)(3087)$

AOF **3,254** MCF D

RECEIVED
JUN 23 1958
OIL CON. COM.

TESTED BY: **R. R. Davis**

WITNESSED BY: **A. R. Kendrick**

Lewis D. Galloway

L. D. Galloway