

# El Paso Natural Gas Company

El Paso, Texas  
July 15, 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 Pool and Wildcat Pictured Cliffs Pool. The El Paso Natural Gas Company San Juan 27-5 Unit No. 30 (PM) is located 1140 feet from the North line and 800 feet from the East line of Section 21, Township 27 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico.

This well has been completed in the Point Lookout and Cliff House sections 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 3561 feet with 150 sacks of cement. Top of the cement is at 2700 feet, which is above the top of the Pictured Cliffs at 3350 feet.
3. 5 1/2" liner set from 3522 feet to 5713 feet with 250 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 Cliff House section was perforated in two intervals and fractured with water and sand, and finally squeezed off with 150 sacks of cement.
7. The Pictured Cliffs formation was perforated in one interval and fractured with water and sand.
8. All perforations were cleaned out after treatment and completion was accomplished by setting a Baker Model "EGJ" production packer on 2" EUE tubing at 3582 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.

COPY

9. 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.

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 the drilling block lies entirely within the boundaries of the San Juan 27-5 Unit, of which El Paso Natural Gas Company is operator, approval of any other operator has not been sought to dually complete this well. 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 E/2 of Section 21, Township 27 North, Range 5 West to the Mesa Verde formation and the NE/4 of Section 21, 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,

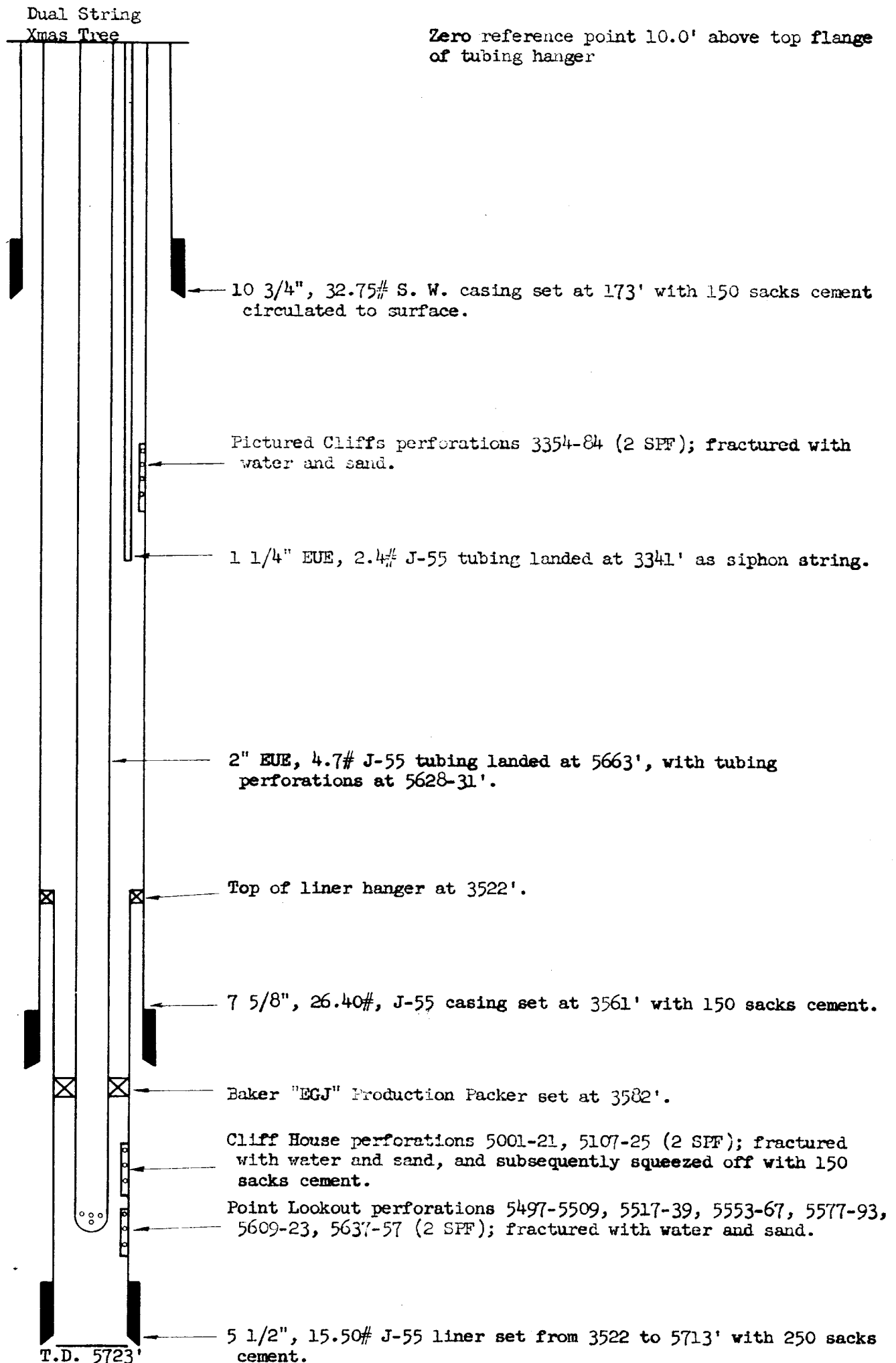
OR'G'NAL SIGNED E. S. OBERLY

E. S. Oberly,  
Division Petroleum Engineer

ESO:dgb

cc: MNOCC (Emery Arnold) ✓  
Sam Smith  
USGS (Phil McGrath)

SCHEMATIC DIAGRAM OF DUAL COMPLETION  
El Paso Natural Gas Co. San Juan 27-5 Unit No. 30 (PM)  
NE/4 Section 21, T-27-N, R-5-W



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 April  
20, 1958, I was called to the location of the El Paso Natural Gas  
Company San Juan 27-5 Unit No. 30 (PM) Well located in the NENE/4 of  
Section 21, 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 3582 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 16th day of July, 1958.

Paul MacLachlan  
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 30, 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, Cuccia State No. 3 (PM), 890S,  
1090W; 32-27-8, 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 2368 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours June 13, 1958 with the following data obtained:

PC SIPC 616 psig; Shut-in 8 days

MV SIPT 1077 psig; Shut-in 8 days

<u>Time</u> <u>Minutes</u>	<u>MV Flowing Pressure</u> <u>Tubing Psig</u>	<u>PC SIPC Psig</u>	<u>MV Working</u> <u>Pressure, Psig</u>	<u>Temp ° F</u>
0	-	616		-
15	298	617		66
30	262	617		69
45	233	617		70
60	213	617		70
180	200	618	Calc. 381	72

The choke volume for the Mesa Verde was 2400 MCF/D with an AOF of 2664 MCF/D.

The Pictured Cliffs zone was tested June 24, 1958 with a 3/4" choke for 3 hours with the following data obtained:

PC SIPC 657 psig; Shut-in 19 days

MV SIPT 1100 psig; Shut-in 11 days

<u>Time Minutes</u>	<u>PC Flowing Pressure Casing Psig</u>	<u>MV SIPT Psig</u>	<u>PC Working Pressure, Psig</u>	<u>Temp ° F</u>
0	-	1100		-
15	320	1100		60
30	275	1101		62
45	254	1101		63
60	241	1101		64
180	187	1102	191	68

The choke volume for the Pictured Cliffs test was 2388 MCF/D with an AOF of 2592 MCF/D.

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

Very truly yours,

---

M. W. Rischard  
Gas Engineer

MWR/nb

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

EL PASO NATURAL GAS COMPANY  
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE May 27, 1958

Operator <b>El Paso Natural Gas</b>		Lease <b>San Juan 27-5 Unit No. 30 (M)</b>	
Location <b>1140N, 800E; 21-27-5</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>3549</b>	Tubing Diameter <b>2"</b>	Set At Feet <b>5653</b>
Pay Zone From <b>5497</b>	To <b>5657</b>	Total Depth <b>5726</b>	Shut-In <b>4/21/58</b>
Stimulation Method <b>Sand Water Frac</b>		Flow Through Casing	Flow Through Tubing <b>X</b>

Choke Size, in. mm <b>.75</b>	Choke Constant: C <b>12.365</b>	<b>5-1/2" liner 3522 - 5713</b>
Shut-In Pressure, Casing, PSIG <b>1047 (PC)</b>	PSIA <b>1059</b>	Days Shut-In <b>36</b>
Flowing Pressure, P, PSIG <b>205</b>	PSIA <b>217</b>	Shut-In Pressure, Tubing, PSIG <b>1107 (MV)</b>
Temperature, T <b>64</b>	Gravity <b>.693</b>	Working Pressure, Pw, PSIG <b>(Calc.) 435</b>
		Fp, From Tables <b>1.024</b>

Final SIPC (PC) 1054 psig

1-1/4" at 3431  
Packer at 3582

CHOKE VOLUME  $Q = C \times P_c \times F_p \times F_g \times F_v$

$$Q = (12.365)(217)(.9962)(.9325)(1.024) = 2,552 \text{ MCF/D}$$

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

$$\left( \frac{1,252,161}{1,062,936} \right)^n = (1.1780)^{.75} (2552) = (1.1308)(2552)$$

$$Q = 2,886 \text{ MCF/D}$$

S. V. Roberts

*Lewis D. Galloway*  
L. D. Galloway

EL PASO NATURAL GAS COMPANY  
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE June 4, 1958

Operator <b>El Paso Natural Gas Company</b>		Lease <b>San Juan 27-5 Unit 30 (P)</b>	
Location <b>1140N, 800E, 21-27-5</b>		County <b>Rio Arriba</b>	State <b>New Mexico</b>
Pictured Cliffs		Undesignated	
Casing Diameter <b>7-5/8</b>	Set At: Feet <b>3549</b>	Tubing Diameter <b>1-1/4</b>	Set At: Feet <b>3431</b>
Perforation <b>3354</b>	<b>3384</b>	Total Depth <b>5726</b>	Shut-in 4/21/58
Stimulation Method <b>Sand Water Frac</b>		Flow Through Casing <b>X</b>	Flow Through Tubing

Choke Size, inches <b>.75</b>	Choke Constant, C <b>12.365</b>	5-1/2 liner	3522 - 5713
Shut-in Pressure, PSIG <b>(PC) 1052</b>	PSIG - 12 PSIA <b>1064</b>	Shut-in Pressure, tubing <b>(PC) 1062</b>	PSIG - 12 PSIA <b>1074</b>
Flowing Pressure, PSIG <b>755</b>	PSIG - 12 PSIA <b>767</b>	Flowing Pressure, Pw <b>769</b>	PSIG - 12 PSIA <b>781</b>
Temperature <b>72</b>	<b>.85</b>	Flow From Tables <b>1.079</b>	Gravity <b>.650</b>

Final Shut-in pressure Mv 1113 (T)

Packer at 3582

CHOKE VOLUME  $Q = C \times P_1 \times F_1 \times F_2 \times F_3$

$$C = 12.365 \times 767 \times 4887 \times 9608 \times 1.079$$

9,721

MCF D

$$OPEN FLOW Q = \left( \frac{P_1^2 - P_2^2}{P_1^2 - P_2^2} \right)^n$$

$$Q = \left( \frac{1153476}{543515} \right)^n$$

$$(2.1222)^{.85} \times 9,721 = (1.8970) \times 9,721$$

Q = 18,441

MCF D

Richard Proctor

Checked By: H. L. Kendrick

*Lewis D. Galloway*  
L. D. Galloway