

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 Wildest Pictured Cliffs Pools. The El Paso Natural Gas Company San Juan 28-6 Unit No. 81 (PM) is located 890 feet from the South line and 890 feet from the West line of Section 12, Township 27 North, Range 6 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 174 feet with 150 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 3387 feet with 200 sacks of cement. Top of the cement is at 2500 feet, which is above the top of the Pictured Cliffs at 3212 feet.
3. 5 1/2" liner set from 3342 feet to 5599 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 five intervals and fractured with water and sand.
6. The Cliff House section was perforated in three intervals and fractured with water and sand.
7. The Pictured Cliffs formation was perforated in three intervals 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 3409 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.
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.

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 is the operator of the San Juan 28-6 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 12, Township 27 North, Range 6 West to the Mesa Verde formation and the SW/4 of Section 12, Township 27 North, Range 6 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

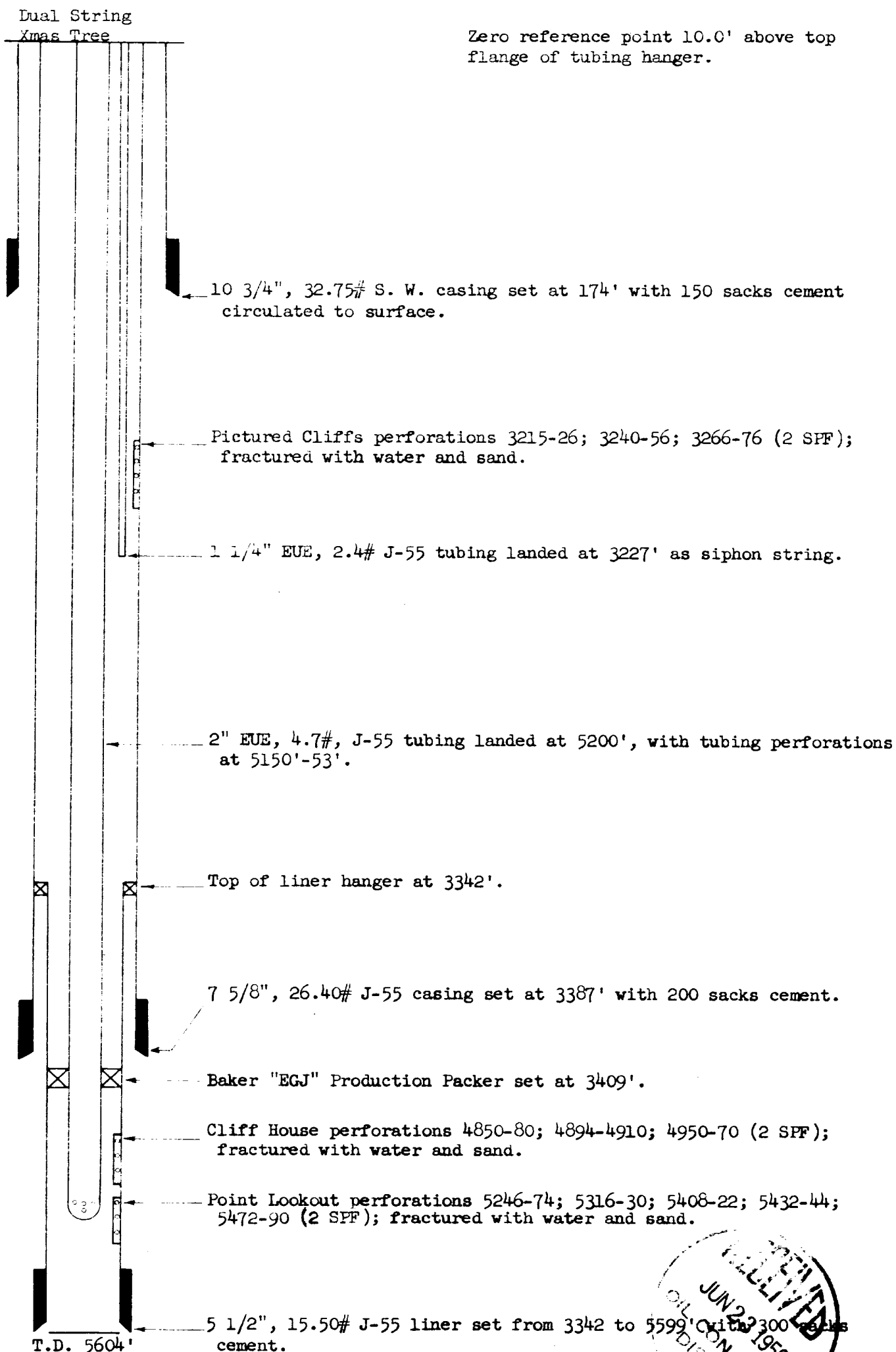
E. S. Oberly,
Division Petroleum Engineer

ESO:dgb

Encl.

cc: NMOCC (Emery Arnold) ✓
Sam Smith
U.S.G.S. (Phil McGrath)

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. San Juan 28-6 Unit No. 81 (PM)
SW/4 Section 12, T-27-N, R-6-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:

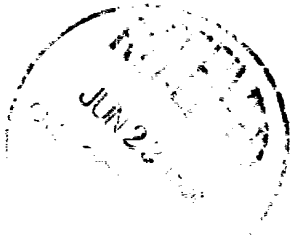
I am an employee of Baker Oil Tools, Inc., and that on May 9,
1958, I was called to the location of the El Paso Natural Gas Company
San Juan 28-6 Unit No. 81 (PM) Well located in the SWSW/4 of Section 12,
Township 27 North, Range 6 West, N.M.P.M., for advisory service in
connection with installation of a production packer. In my presence, a
Baker Model "EGJ" Production Packer was set in this well at 3409 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.

Paul H. 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 12, 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, San Juan 28-6 Unit 81 (PM), 890S,
890W; 12-27-6; Rio Arriba, 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 5409 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 978 psig; Shut-in 19 days

PC SIPT 979 psig;

MV SIPT 1067 psig; Shut-in 19 days

<u>Time Minutes</u>	<u>MV Flowing Pressure Tubing Psig</u>	<u>PC SIPC Psig</u>	<u>MV Working Pressure, Psig</u>	<u>Temp ° F</u>
0	-	978		-
15	483	980		65
30	411	980		65
45	377	980		66
60	358	980		66
180	301	982	Calc. 601	68

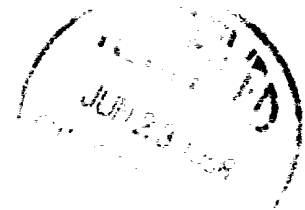
The choke volume for the Mesa Verde was 3684 MCF/D with an AOF of 4956 MCF/D.

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

PC SIPC 1002 psig; Shut-in 26 days

PC SIPT 1002 psig;

MV SIPT 1067 psig; Shut-in 7 days



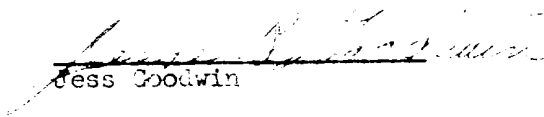
June 12, 1958

<u>Time</u> <u>Minutes</u>	<u>PC Flowing Pressure</u> <u>Casing Psig</u>	<u>WV SEPT Psig</u>	<u>PC Working</u> <u>Pressure, Psig</u>	<u>Temp ° F</u>
0	-	107		-
15	530	1067		59
30	450	1068		60
45	464	1068		61
60	454	1070		62
120	568	1073	Tbg. 377	64

The choke volume for the Pictured Cliffs test was 4611 MCF/D with an AOF of 5279 MCF/D.

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

Very truly yours,


Jess Goodwin

JG/nb

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

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE May 29, 1958

Lease	San Juan 28-6 No. 81 (M)
County	Rio Arriba
State	New Mexico
Pool	Blanco
Casing Diameter	7-5/8
Set At Feet	3377
Perforations	5246
Total Depth	5604
Flow Through Tubing	Shut-in 5/10/58
Simulation Method	Sand Water Frac
	X

Choke Size, Inches	.750	12.365
Shut-in Pressure, PSIG	(PC) 978	990
Flowing Pressure, PSIG	301	313
Temperature, °F	68	.75
5-1/2" liner 2257 (Top)	(MV) 1067	1079
Working Pressure, PSIG	Calc. 613	613
Flow From Tables	1.036	.703

Final Pressure SIPC (PC) = 982 psig

Packer at 3409
1-1/4" at 3217

CHOKE VOLUME $Q = C \times P_1 \times A_1 \times F_1 \times F_2$

$Q = 12.365 (313) (.9924) (.9258) (1.036) = 3,684$ MCF/D

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

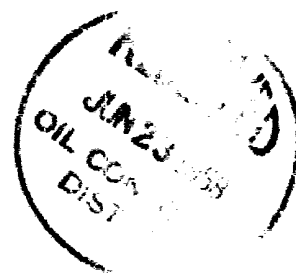
$$\left(\frac{1164241}{788472} \right)^n (1.4765)^{.75} (3,684) = (1.3399) (3684)$$

4,936 MCF/D

R. R. Davis

WILLIAM D. GALLAWAY

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		Lease San Juan 28-6 No. 81 (P)	
Location 8908, 890W, 12-27-6		County Rio Arriba State New Mexico	
Formation Pictured Cliffs		Point Undesignated	
Casing Diameter 7-5/8"	Set At Feet 3377	Tubing Diameter 1-1/4"	Set At Feet 3217
Flow Line Feet 3215	3276	Total Depth 5604 c/o 5556	Shut-in 5-10-58
Stratigraphic Method Sand Water Frac		Flow Through Tubing X	

Casing Size, Inches .75		Choke Constant, C 12.365		5-1/2" liner 3342 - 5599	
Shut-in Pressure, Casing 1002	PSIG - 12 - PSIA 1014	Days Shut-In 26	Shut-In Pressure, Tubing 1002	PSIG - 12 - PSIA 1014	
Flowing Pressure, C 368	PSIG - 12 - PSIA 380		Working Pressure, Pw 377	PSIG - 12 - PSIA 389	
Temperature, C 64	85		Fpv (From Tables) 1.041	Gravity .670	

Initial SIPT (MV) 1067 PSIG
Final SIPT (MV) 1073 PSIG

2" at 5190
Packer at 3409

CHOKE VOLUME $Q = C \times P_1 \times E \times F_g \times F_{pv}$

$$Q = (12.365)(380)(.9962)(.9463)(1.041)$$

4,611

MCF/D

OPEN FLOW $Q_{of} = Q \left(\frac{P_1^2 - P_2^2}{P_1^2 - P_{wf}^2} \right)^{1/n}$

$$Q_{of} = \left(\frac{1028196}{876875} \right)^{1/n}$$

$$(1.1725)^{.85} (4611) = (1.1449)(4611)$$

Asst **5,279** MCF/D

Jess Goodwin

Checked By H. L. Kendrick

Lewis D. Galloway
L. D. Galloway

