

6-29-58
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El Paso Natural Gas Company

El Paso, Texas

June 23, 1958

ADDRESS REPLY TO
POST OFFICE BOX 397
ARMINGTON, 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 San Juan 27-5 Unit No. 37 (PM) is located 600 feet from the North line and 840 feet from the East line of Section 20, Township 27 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico.

This well has been completed in the Cliff House and Point Lookout 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 3445 feet with 250 sacks of cement. Top of the cement is at 2540 feet, which is above the top of the Pictured Cliffs at 3262 feet.
3. 5 1/2" liner set from 3418 feet to 5617 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 two intervals and fractured with water and sand.
6. The Cliff House section was perforated in four intervals and fractured with water and sand.
7. The Pictured Cliffs formation was perforated in two 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 3450 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.

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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 San Juan 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 E/2 of Section 20, Township 27 North, Range 5 West to the Mesa Verde formation and the NE/4 of Section 20, 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

ESG:dgt

Encl.

cc: NMCCC (Emery Arnold)

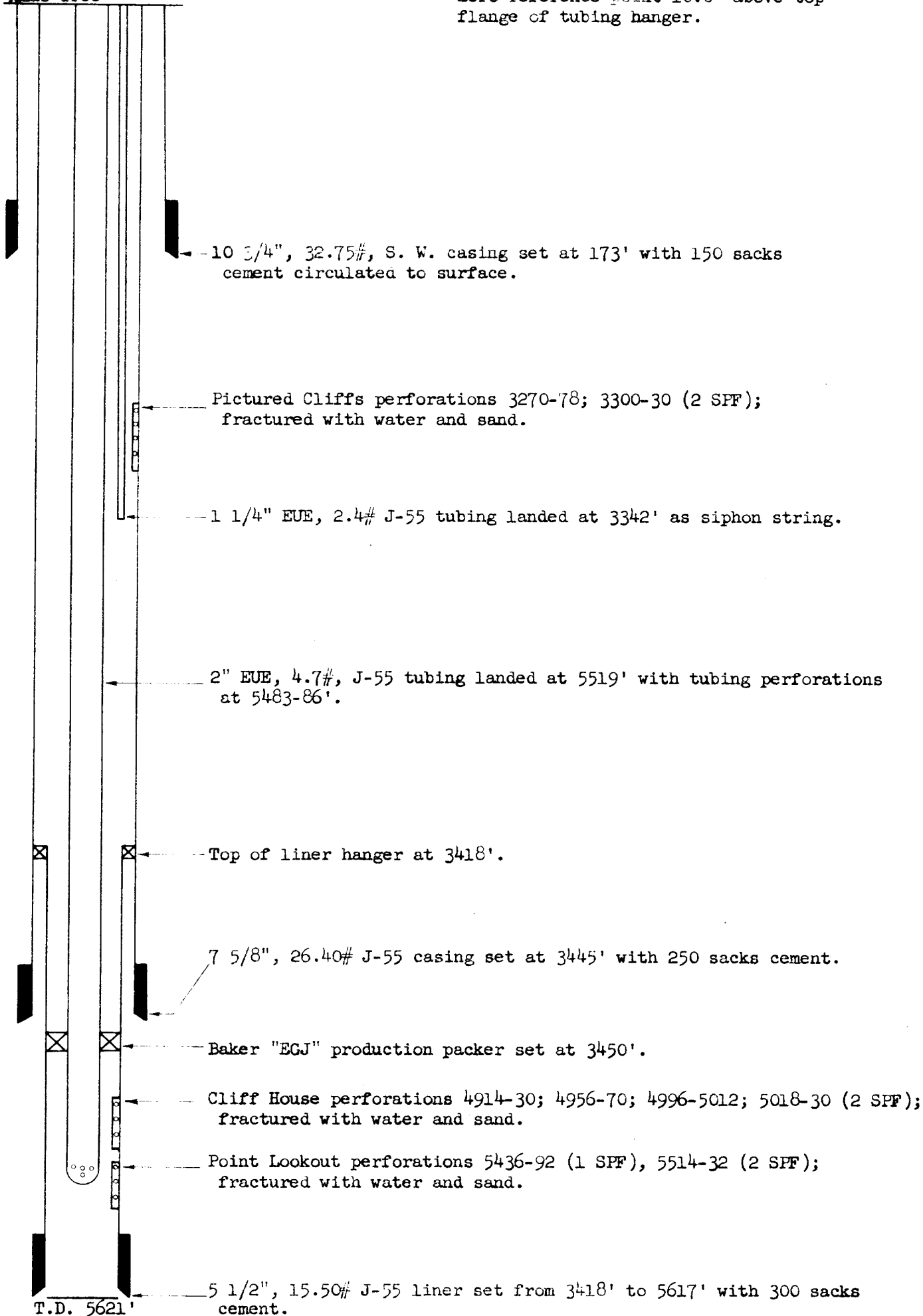
Sam Smith

USGS (Phil McGrath)

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. San Juan 27-5 Unit No. 37 (PM)
NE/4 Section 20, T-27-N, R-5-W

Dual String
Xmas Tree

Zero reference point 10.0' above top
flange of tubing hanger.



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 March 15, 1958, I was called to the location of the El Paso Natural Gas Company San Juan 27-5 Unit No. 37 (FM) Well located in the NENE/4 of Section 20, 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 3450 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 23rd day of June, 1958.

Paul H. MacCall
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 18, 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 27-5 Unit 37 (PM), 800N,
840E; 20-27-5, 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 3450 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours June 3, 1958, with the following data obtained:

PC SIPC 1096 psig; Shut-in 79 days

MV SIIT 1097 psig; Shut-in 7 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	-	1096		-
15	533	1097		64
30	488	1098		64
45	411	1099		65
60	383	1099		65
180	295	1101	602 Calc.	66

The choke volume for the Mesa Verde was 3639 MCF/D with an AOF of 4769 MCF/D.

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

PC SIPC 1094 psig; Shut-in 86 days

MV SIIT 1090 psig; Shut-in 7 days

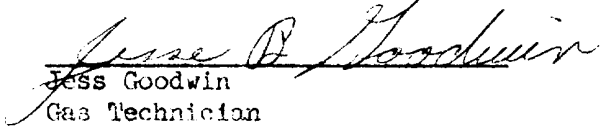
June 13, 1958

<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	-	1090		-
15	310	1090		55
30	232	1095		57
45	169	1092		58
60	137	1092		60
120	109	1093		61
180	97	1093	101	61

The choke volume for the Pictured Cliff test was 1286 MCF/D with an AOF of 1297 MCF/D.

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

Very truly yours,


Jess Goodwin
Gas Technician

JG/nb

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

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE June 3, 1958

Description El Paso Natural Gas Company		Lease San Juan 27-5 Unit 37 (M)	
Location 800N, 840E; 20-27-5		County Rio Arriba	State New Mexico
Mesa Verde		Blanco	
Casing Diameter 7-5/8	Set At Feet 3435	Tubing Diameter 2"	Set At Feet 5509
Pay Zone 5436	To 5492	Total Depth 5573 c/o 5573	Shut-in 3/16/58 Re Shut-in 5/27/58
Stimulation Method Sand Water Frac		Flow Through Casing X	

Choke Size, Inches .75	Choke Constant, C 12.365	Days Shut-in 7 +	5-1/2 liner 3418 - 5617
Shut-in Pressure, PSIG 1096 (PC)	PSIG - 12 - PSIA 1108		Shut-in Pressure, Tubing 1097 (MV)
Flowing Pressure, P 295	PSIG - 12 - PSIA 307		Working Pressure, Pw Calc. 614
Temperature 66	.75		Flow From Tables 1.034
			Gravity .693

Initial SIPC (PC) 1096 PSIG
Final SIPC (PC) 1101 PSIG

Packer at 3450
1-1/4 at 3332

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

$Q = (12.365)(307)(.9943)(.9325)(1.034)$

3,639

MCF/D

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

$Q = \left(\frac{1,229,881}{852,885} \right)^n$

$(1.4420)^{.75} (3639) = (1.316)(3639)$

AGF 4,789 MCF/D

Note: Blank side nipple and 2" Grove Valve on P.C. casing loose. Grove Valve (2") on MV tubing does not open easily.

S. V. Roberts and Jess Goodwin

Lewis D. Galloway
L. D. Galloway

+ Test attempted on 5/27/58. Froze off. Re-Shut-in 5/27/58

OPEN FLOW TEST DATA

DUAL COMPLETION

DATE June 10, 1958

Operator El Paso Natural Gas Company		Lease San Juan 27-5 Unit 37 (P)	
Location 800N, 840E; 20-27-5		County Rio Arriba	State New Mexico
Formation Pictured Cliffs		Pool Undesignated	
Casing Diameter 7-5/8	Set At Feet 3435	Casing Diameter 1-1/4	Set At Feet 3332
Pay Zone From 2309	To 2807	Total Depth 5573 c/o 5573	Shut-in 3/16/58
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 3418-5617	
Shut-In Pressure, Casing 1094 (PC)	PSIG	12 = PSIA 1106	Days Shut-In 86 (PC)	Shut-In Pressure, Tubing 1094 (PC)	PSIG
Flowing Pressure, P 97	PSIG	12 = PSIA 109		Working Pressure: Pw 101	PSIG
Temperature 61	F			Sp. Gr. From Tables 1.009	Gravity .670

Initial SIPT (MV) 1090 psig
Final SIPT (MV) 1093 psig

2" at 5509
Packer at 3450

CHOKE VOLUME $Q = C \times P_c \times F_c \times F_g \times F_{pv}$

$$Q = (12.365)(109)(.9990)(.9463)(1.009)$$

1286

MCF/D

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

$$\text{Adj } \left(\frac{1223236}{1210467} \right)^n$$

$$(1.0105)^{.65} (1286) = (1.00891)(1286)$$

$$\text{Adj } 1297 \text{ MCF/D}$$

Jess Goodwin

Checked By: H. L. Kendrick

Lewis D. Galloway
L. D. Galloway