El Paso Natural Gas Company

El Paso, Texas
July 30, 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 South Blanco Pictured Cliffs Pool Extension. The El Paso Natural Gas Company San Juan 28-6 Unit No. 86 (PM) is located 1500 feet from the North line and 1750 feet from the East line of Section 24, Township 27 North, Range 6 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 174 feet with 120 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 3238 feet with 150 sacks of cement. Top of the cement is at 2450 feet, which is above the top of the Pictured Cliffs at 3067 feet.
3. 5 1/2" liner set from 3177 feet to 5445 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 four 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 3247 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.

The acreage dedicated to this well falls entirely within the San Juan 28-6 Unit, and is bounded on the East by the San Juan 27-5 Unit. Since El Paso Natural Gas Company is operator of both units, approval has not been sought from any other operator 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 24, Township 27 North, Range 6 West to the Mesa Verde formation and the NE/4 of Section 24, 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.

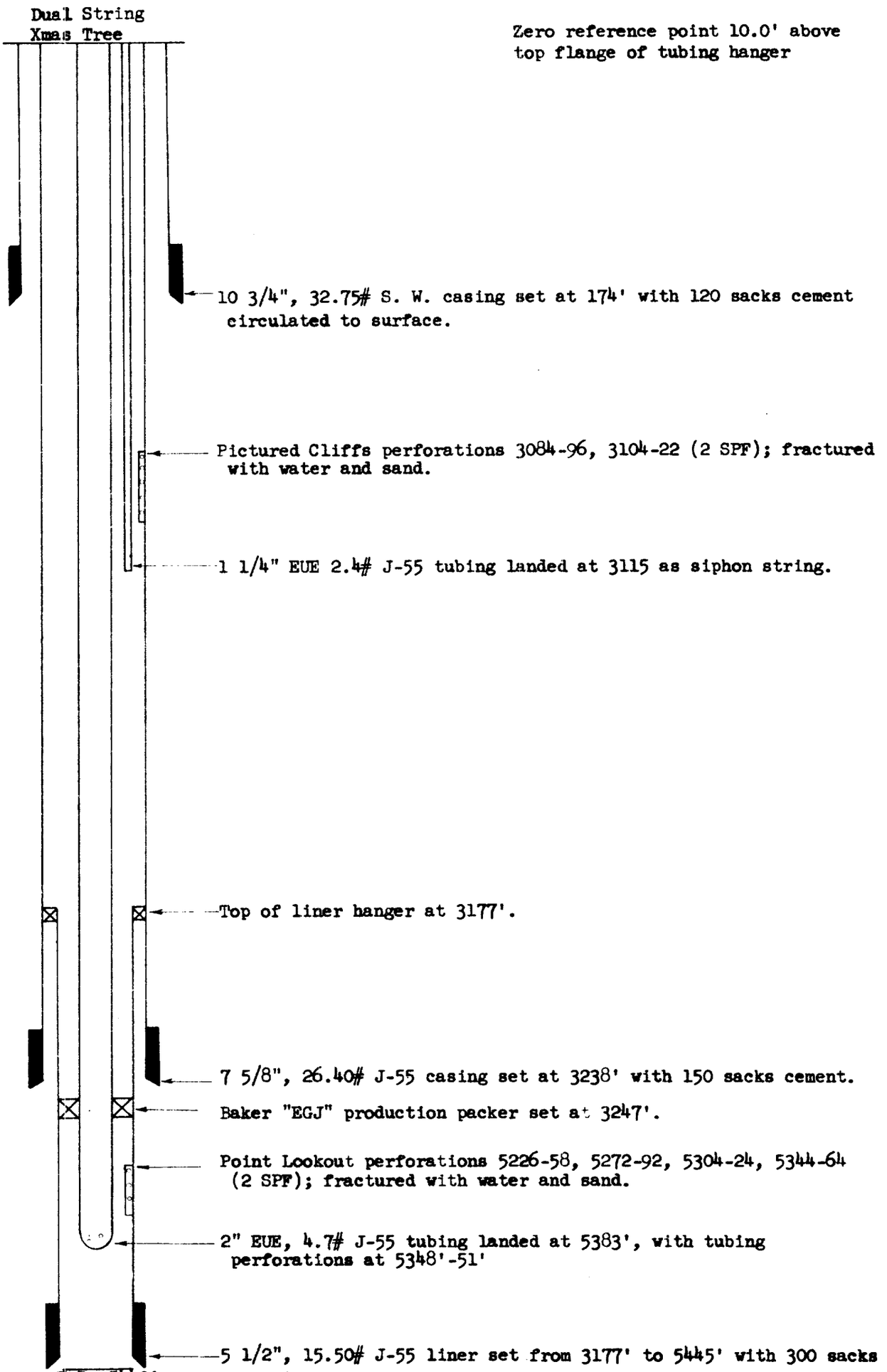
Yours very truly,

ORIGINAL SIGNED E. S. OBERLY

E. S. Oberly,
Division Petroleum Engineer

ESO:dgb
cc: NMOCC (2)(Emery Arnold)
Sam Smith
USGS (Phil McGrath)

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. San Juan 28-6 Unit No. 86 (PM)
NE/4 Section 24, 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 June 26, 1958, I was called to the location of the El Paso Natural Gas Company San Juan 28-6 Unit No. 86 (PM) Well located in the SWNE/4 of Section 24, 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 "EOJ" Production Packer was set in this well at 3247 feet in accordance with the usual practices and customs of the industry.

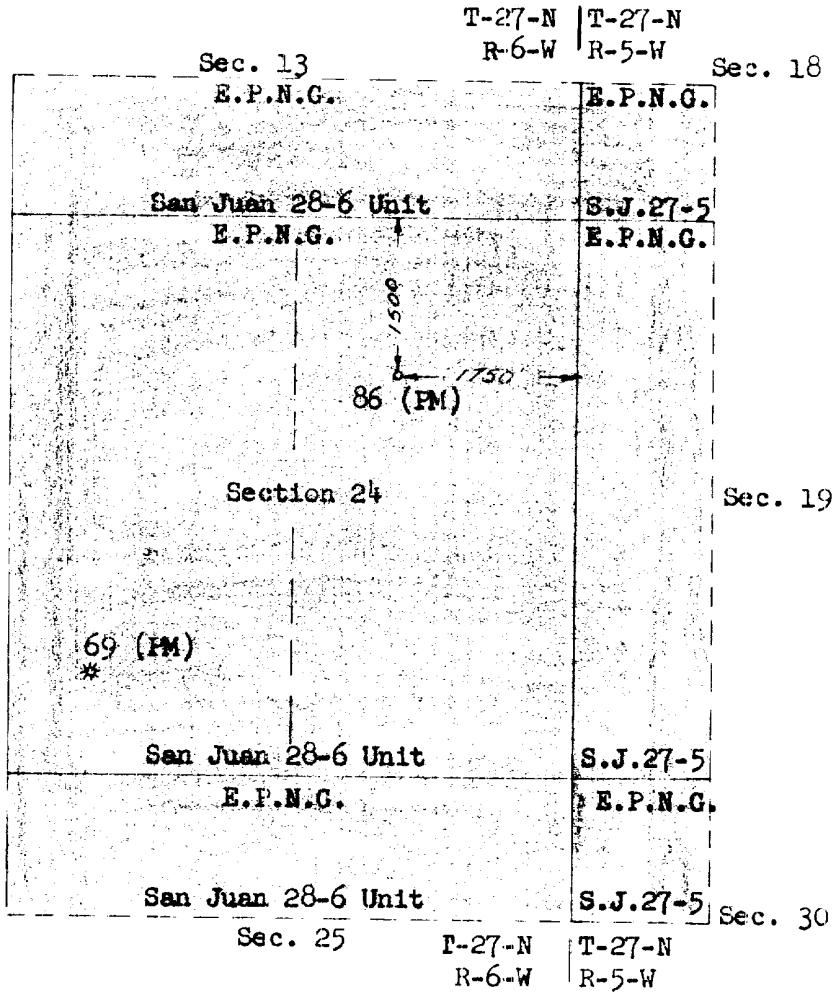
Mack M. Mahaffey

Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 31st day of July, 1958.

Notary Public in and for San Juan County, New Mexico

My commission expires February 24, 1960.

PLAT SHOWING LOCATION OF DUALLY COMPLETED
El Paso Natural Gas Co. San Juan 28-6 Unit No. 86 (PM)
and Offset Acreage



EL PASO NATURAL GAS COMPANY
EL PASO, TEXAS

SCALE	DATE	No.
DRAWN BY	CHECKED BY	

FORM 7-132 (10-56)

EL PASO NATURAL GAS COMPANY

P. O. Box 997
Farmington, New Mexico

July 16, 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 86 (PM) 1500N, 1750E; 24-27-6, Rio Arriba, New Mex.
(Name - Location - Company)

Dear Mr. Arnold:

The subject well was dually completed in the Pictured Cliffs and Mesa Verde zones and a packer was set at 3247 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours July 3, 1958 with the following data obtained:

PC SIPC 1075 psig; Shut-in 13 days

PC SIPT 1075 psig;

MV SIPT 1070 psig; Shut-in 13 days

Time Minutes	(MV) Flowing Pressure Psig	(PC) SIP (C) Psig	(MV) Working Pressure, Psig	Temp ° F
0	-	1075		-
15	463	1079		73
30	411	1080		73
45	377	1080		73
60	360	1080		73
180	299	1081	Calc. 599	74

The choke volume for the Mesa Verde was 3629 MCF/D with an AOF of 4839 MCF/D.

The Pictured Cliffs zone was tested July 16, 1958 with a 3/4" choke for 3 hours with the following data obtained:

PC SIPC 1096 psig; Shut-in 26 days

PC SIPT 1091 psig;

MV SIPT 1078 psig; Shut-in 13 days

Time Minutes	(PC) Flowing Pressure Casing Psig	(MV) SIP (T) Psig	(PC) Working Pressure, Psig	Temp ° F
15	547	1080	569	70
30	416	1081	419	71
45	367	1081	382	71
60	304	1081	315	71
120	232	1082	239	72
180	191	1082	197	72

The choke volume for the **Pictured Cliffs** test was 2395 MCF/D with an AOF of 2470 MCF/D.

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

Very truly yours,

Jesse B. Goodwin

Jesse B. Goodwin
Gas Technician

JBG/nb

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

FORM 24-15

EL PASO NATURAL GAS COMPANY

OPEN FLOW TEST DATA

DUAL COMPLETION

DATE July 9, 1958

Operator: El Paso Natural Gas Company		Lease: San Juan 28-6 No. 86 (M)	
Location: 1500N, 1750E; 24-27-6		County: Rio Arriba	State: New Mexico
Formation: Mesa Verde		Pool: Blanco MV	
Casing Diameter: 7-5/8	Set At: Feet: 3228	Tubing Diameter: 2"	Set At: Feet: 5373
Pay Zone: From 4226	To 5364	Total Depth: 5447	Shut-in 6/26/58
Stimulation Method: Sand Water Frac.		Flow Through Casing	Flow Through Tubing: X

Choke Size, Inches: .75	Choke Constant: C: 12.365		5-1/2 liner 3177 - 5445	
Shut-in Pressure, Casing, PSIG: (PC) 1075	+ 12 = PSIA	Days Shut-in: 13	Shut-in Pressure, Tubing PSIG: (MV) 1070	+ 12 = PSIA: 1082
Flowing Pressure: P PSIG: 299	+ 12 = PSIA: 311		Working Pressure: Pw PSIG: Calc.	+ 12 = PSIA: 611
Temperature: T °F: 74	n: .75		Fpv (From Tables): 1.033	Gravity: 700

Final SIPC (PC) 1081 **Packer at 3247**

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

Q = (12.365)(311)(9868)(9258)(1.033) = 3629 MCF/D

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

Aof = $\left(\frac{1170724}{797403} \right)^n$ = $\frac{1.4681}{1.3335}$

Aof = 4839 MCF/D

TESTED BY Frank Clark

WITNESSED BY

Checked By Tom Grant

L. D. Galloway

FORM C-122 (1958)

EL PASO NATURAL GAS COMPANY

OPEN FLOW TEST DATA

DUAL COMPLETION

DATE **July 9, 1958**

Operator: **El Paso Natural Gas Company**		Lease: **San Juan 28-6 No. 86 (M)**	
Location: **1500N, 1750E; 24-27-6**		County: **Rio Arriba**	State: **New Mexico**
Formation: **Mesa Verde**		Pool: **Blanco MV**	
Casing: Diameter: **7-5/8**	Set At: Feet: **3228**	Tubing: Diameter: **2"**	Set At: Feet: **5373**
Pay Zone: From: **4226**	To: **5364**	Total Depth: **5447**	Shut-in **6/26/58**
Stimulation Method: **Sand Water Frac.**		Flow Through Casing	Flow Through Tubing: **X**

Choke Size, Inches: **.75**	Choke Constant: C: **12.365**	**5-1/2 liner 3177 - 5445**	
Shut-in Pressure, Casing, PSIG: **(PC) 1075**	· 12 = PSIA	Days Shut-in: **13**	Shut-in Pressure, Tubing PSIG: **(MV) 1070** · 12 = PSIA: **1082**
Flowing Pressure: P PSIG: **299**	· 12 = PSIA: **311**		Working Pressure: P_w PSIG: **Calc.** · 12 = PSIA: **611**
Temperature: T °F: **74**	n: **.75**	Fpv (From Tables): **1.033**	Gravity: **700**

Final SIPC (PC) 1081 **Packer at 3247**

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

Q = (12.365)(311)(9868)(9258)(1.033) = **3629** MCF D

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

Aof = $\left(\frac{1170724}{797403} \right)^n = \frac{1.4681}{1.3335}$

Aof = **4839** MCF D

TESTED BY **Frank Clark**

WITNESSED BY

Checked By **Tom Grant**

Lewis D. Galloway

L. D. Galloway

OPEN FLOW TEST DATA

DUAL COMPLETION DATE July 16, 1958

Operator: El Paso Natural Gas		Lease: San Juan 28-6 Unit 86 (P)	
Location: 1500N, 1750E; 24-27-6		County: Rio Arriba	State: New Mexico
Formation: Pictured Cliffs		Pool: Undesignated	
Casing: Diameter: 7-5/8	Set At: Feet: 3228	Tubing: Diameter: 1-1/4	Set At: Feet: 3115
Pay Zone: From: 3084	To: 3122	Total Depth: 5447	Shut-in 6/26/58
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 3177 - 5445	
Shut-in Pressure Casing: PSIG: (PC) 1096	+ 12 = PSIA: 1108	Days Shut-in: 13	Shut-in Pressure Tubing: PSIG: (PC) 1091
+ 12 = PSIA: 1103			
Flowing Pressure: P: PSIG: 191	+ 12 = PSIA: 203		Working Pressure: Pw: PSIG: 197
+ 12 = PSIA: 209			
Temperature: T: F: 72	n: 85	Fpv (From Tables): 1.020	Gravity: .670

Initial SIPT (MV) 1078 psig **Packer at 3247**
Final SIPT (MV) 1082 psig

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

$Q = 12.365 \times 203 \times .9887 \times 8.9463 \times 1.020 = 2395$ MCF D

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

$Aof = \left(\frac{1227664}{1183983} \right)^n = (1.0368)^{.85} \times 2395 = 1.0312 \times 2395 =$

Aof 2470 MCF D

TESTED BY: Jesse B. Goodwin

WITNESSED BY:

Checked By H. L. Kendrick

Lewis D. Galloway.

L. D. Galloway