

El Paso Natural Gas Company

El Paso, Texas

September 11, 1957

DIRECT REPLY TO:
P. O. BOX 697
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 South Blanco Pictured Cliffs Extension pool, and in the Blanco Mesa Verde pool. The El Paso Natural Gas Company Rincon Unit No. 85 (PM) is located 1650 feet from the North line and 890 feet from the East line of Section 15, Township 27 North, Range 7 West, N.M.P.M., Rio Arriba County, New Mexico.

This well has been completed in the Point Lookout and the 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 172 feet with 150 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 3455 feet with 250 sacks of cement. Top of the cement is at 1600 feet, which is above the top of the Pictured Cliffs formation at 3305 feet.
3. 5 1/2" liner set from 3422 feet to 5755 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 Cliff House formation was perforated in one interval 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 after treatment and completion was accomplished by setting a Baker Model EGJ production packer on 2" EUE tubing at 3562 feet with the tubing perforations set opposite the Point Lookout perforations. 1 1/4" Grade B line pipe was run, with the tubing perforations set opposite the Pictured Cliffs perforations, as a siphon string. The Point Lookout gas will be produced through the 2" EUE tubing and the Pictured Cliffs gas through the casing.

COPY



9. A Garrett circulating sleeve was installed in the 2" EUE tubing string just below the Pictured Cliffs perforations. This will enable the bottom hole pressure tests to be taken at a future date if so required.
10. 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.

The drilling block falls well within the boundaries of the Rincon Unit, and since El Paso Natural Gas Company is the only operator of this unit the approval of any other operator for dually completing this well has not been sought. I am enclosing:

- (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 15, Township 27 North, Range 7 West, to the Mesa Verde formation, and the NE/4 of Section 15, Township 27 North, Range 7 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. J. COEL
E. J. Coel
Senior Petroleum Engineer

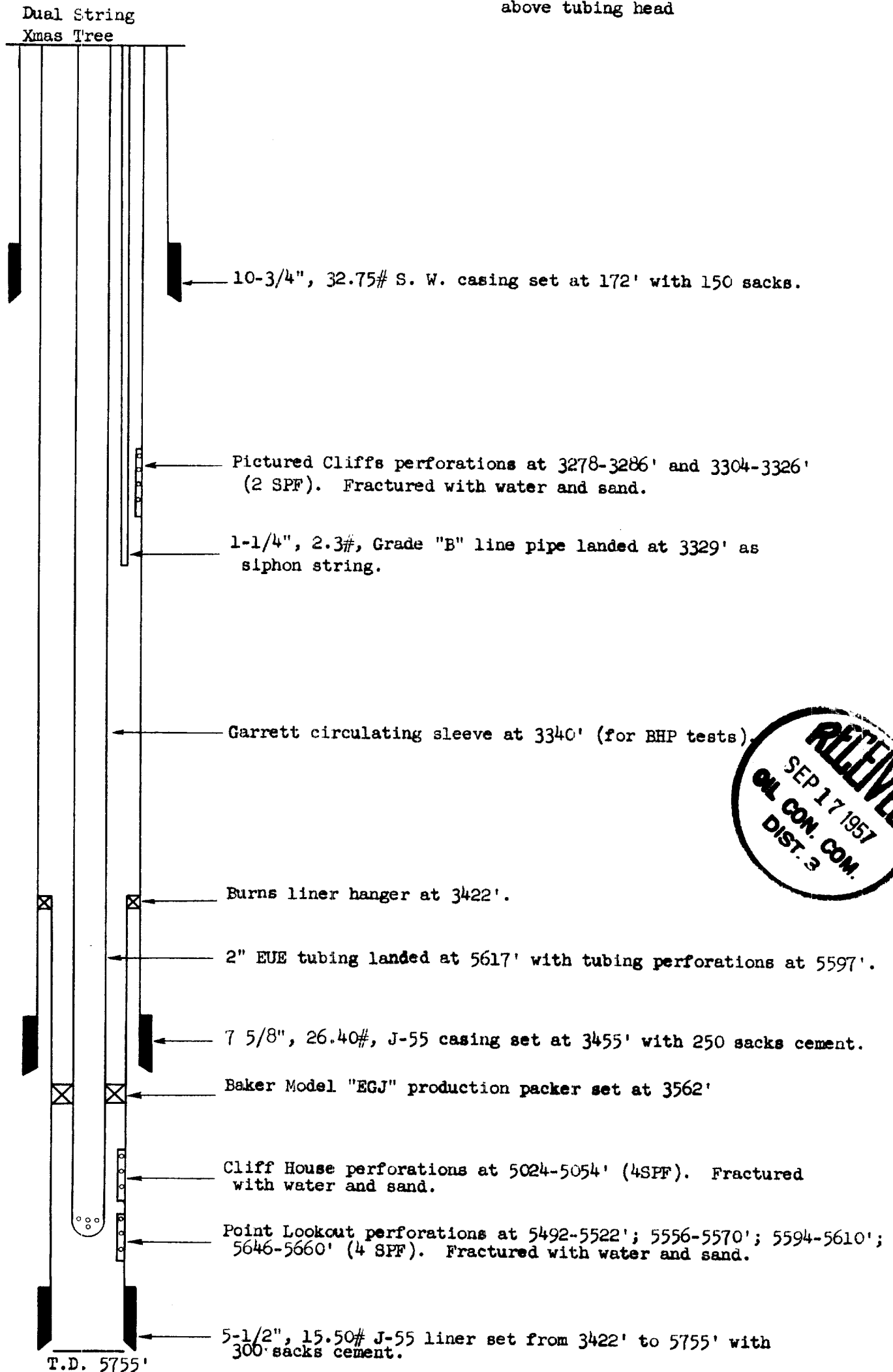
EJC;dgb

Encl.

cc: Emery Arnold
Sam Smith
Phil McGrath

SCHEMATIC DIAGRAM OF DUAL COMPLETION
 EPNG RINCON UNIT NO. 85 (PM)
 (NE/4 Section 15, T27N, R7W)

Zero reference point 10.0'
 above tubing head



STATE OF NEW MEXICO)

COUNTY OF SAN JUAN)

I, Mack 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 21, 1957, I was called to the location of the El Paso Natural Gas Company Rincon Unit No. 85 (FM) Well located in the SE/4 NE/4 of Section 15, Township 27N, Range 7W, N.M.P.M. for the purpose of installing a production packer. Under my direct supervision a Baker Model "EGJ" production packer was set at 3562 feet. The production packer was properly set in accordance with the usual practices and customs of the industry.

Mack Mahaffey



Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 12 day of Sept., 1957.

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, N.M.

September 5, 1957

Mr. E. C. Arnold
Oil Conservation Commission
120 East Chaco
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso Natural
Gas Company Well, Rincon No. 85, NE 15-27-7,
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 3561 feet. The Pictured Cliff zone was tested through a 3/4" choke for three hours August 23, 1957 with the following data obtained:

Pictured Cliff SIPC - 991 psig; shut-in 37 days
Pictured Cliff SIPT - 991 psig; shut-in 37 days
Mesa Verde SIPT - 1081 psig; shut-in 37 days.

<u>Time Minutes</u>	<u>Flowing Pressure PC Casing Psig</u>	<u>MV SIPT Psig</u>	<u>PC Working Pressure, Psig</u>	<u>Temp °F</u>
15	499	1082		57
30	380	1083		58
45	321	1083		60
60	273	1083		61
120	204	1084		63
180	176	1084	178	64

The choke volume for the Pictured Cliff was 2287 MCF/D with an AOF of 2359 MCF/D. The Mesa Verde zone was tested September 4, 1957 with a 3/4" choke for 3 hours with the following data obtained:

Pictured Cliff SIPC - 984 psig; shut-in 12 days
Pictured Cliff SIPT - 984 psig; shut-in 12 days
Mesa Verde SIPT - 1083 psig; shut-in 49 days



<u>Time</u> <u>Minutes</u>	<u>Flowing Pressure</u> <u>MV Tubing Psig</u>	<u>PC SIPC Psig</u>	<u>MV Working</u> <u>Pressure Psig</u>	<u>Temp</u> °F
15	475	987		64
30	389	988		65
45	336	988		66
60	314	989	Calculated	67
180	281	959	571	75

The choke volume for the Mesa Verde test was 3427 MCF/D with an AOF of 4399 MCF/D. The results of the above tests indicate there is no packer leakage.

Very truly yours,



R. A. Ullrich
Gas Engineer

RAU/jla

cc: W. T. Hollis
W. M. Rodgers
E. J. Coel, Jr. (6)
File

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsop

Date: September 4, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
RINCON NO. 85, Rio Arriba County, New Mexico.

Tested By: Richard Proctor and Dick Ullrich.

Location Sec. 15 T. 27 R. 7 ,1650'N,890'N

Shut-In Pressure	PC	SIPC	984	psig	49	(Shut-in _____ days)
	PC	SIPT	984	psig		
	MV SIPT - 1083					

0.750" Choke Volume 3427 MCF/D @ 14.7 psia and 60° F. for 0.6
gravity gas. Flow through tubing for 3 hours.

Calculated 3 Hour Absolute Open Flow 4399 MCF/D

Working Pressure On Calculated = 571 Psig

Producing Formation Mesa Verde

Stimulation Method Sand Water Frac.

Total Depth 5755 - c/o 5680

Field Blanco

H₂S Sweet to lead acetate.

FINAL SIPT (PC) - 989 psig. Packer at 3561.

cc: D. H. Tucker

Bill Parrish

~~W. T. Hollis~~

Dean Rittmann

W. T. Hollis

~~+ G. D. White +~~

W. M. Rodgers

Wayne Cheek

Drilling Department

B. D. Adams

Roland Hamblin

Jack Purvis

~~+ M. W. White +~~

C. C. Kennedy

E. J. Coel, Jr.

A. J. Dudenhoeffer

File

(6)

Lewis D. Galloway
L. D. Galloway



EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADUAL COMPLETIONDATE September 4, 1957

Operator El Paso Natural Gas Company		Lease Rincon No. 85	
Location 1650'N, 890'E, Sec. 15-27-7		County Rio Arriba	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing: Diameter 7-5/8	Set At: Feet 3445	Tubing: Diameter 2	Set At: Feet 5617
Pay Zone: From 5024	To 5660	Total Depth: 5755 - c/o 5680	
Stimulation Method Sand Water Frac.		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches 0.75	Choke Constant: C 12.365		5-1/2" liner - 5755	
Shut-In Pressure, Casing, PSIG 984	- 12 = PSIA	Days Shut-In 49	Shut-In Pressure, Tubing, PSIG 1083	- 12 = PSIA 1095
Flowing Pressure: P, PSIG 281	- 12 = PSIA 293		Working Pressure: P _w , PSIG Calculated	- 12 = PSIA 583
Temperature: T, °F 75	n = .75		Fpv (From Tables) 1.029	Gravity .690

Final SIPC (PC) - 989 psig. Packer at 3561.

CHOKE VOLUME = $Q = C \times P_r \times F_r \times F_g \times F_{pv}$

$$Q = 12.365 \times 293 \times .9859 \times .9325 \times 1.029 = \underline{3427} \text{ MCF/D}$$

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

$$Aof = \left(\frac{1,199,025}{859,136} \right)^{.75} = 1.3956^{.75} \times 3427 = 1.2835 \times 3427$$

$$Aof = \underline{4399} \text{ MCF/D}$$

TESTED BY R. A. Ullrich and R. Proctor

WITNESSED BY _____

cc: E. J. Coel, Jr. (6)


 L. D. Galloway


EL PASO NATURAL GAS COMPANY
GAS WELL TESTTo: Mr. E. E. Alsop
From: Gas Engineering DepartmentDate: August 23, 1957
Place: Farmington, New MexicoDUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
RINCON NO. 85, Rio Arriba County, New Mexico.

Tested By: J. B. Goodwin and R. A. Ullrich

Location Sec. 15 T. 27 R. 7 , 1650'N, 890'E

Shut-In Pressure PC SIPC 991 psig ; (Shut-in 37 days)
PC SIPT 991 psig
MV SIPT 1082 psig0.750" Choke Volume 2287 MCF/D @ 14.7 psia and 60° F. for 0.6
gravity gas. Flow through casing for 3 hours.

Calculated 3 Hour Absolute Open Flow 2359 MCF/D

Working Pressure On tubing = 178 Psig

Producing Formation Pictured Cliffs

Stimulation Method Sand Water Frac.

Total Depth 5755 - c/o 5680

Field Undesignated

H₂S Sweet to lead acetate.

Final SIPT (Mesa Verde) - 1084 psig

cc: D. H. Tucker

~~R. W. H. H. H.~~

W. T. Hollis

~~G. O. W. H. H.~~

W. M. Rodgers

Wayne Cheek

Drilling Department

B. D. Adams

Roland Hamblin

Jack Purvis

~~W. W. H. H. H.~~

C. C. Kennedy

E. J. Coal, Jr.

A. J. Dudenhoeffer

File

Bill Parrish
Dean Rittmann*Lewis D. Galloway*
L. D. Galloway

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADUAL COMPLETIONDATE August 23, 1957

Operator El Paso Natural Gas		Lease Rincon No. 85	
Location 1650'N, 890'E, Sec. 15-27-7		County Rio Arriba	State New Mexico
Formation Pictured Cliffs		Pool Undesignated	
Casing Diameter 7-5/8	Set At: Feet 3445	Tubing Diameter 1-1/4	Set At: Feet 3318
Pay Zone: From 3278	To 3326	Total Depth: 5755 - c/o 5680. Packer at 3561	
Stimulation Method Sand Water Frac.		Flow Through Casing X	Flow Through Tubing

Choke Size, Inches 0.75		Choke Constant: C 12.365		5-1/2" liner at 5755	
Shut-In Pressure, Casing, PSIG 991	- 12 = PSIA 1003	Days Shut-In 37	Shut-In Pressure, Tubing, PSIG 991	- 12 = PSIA 1003	
Flowing Pressure: P, PSIG 176	- 12 = PSIA 188		Working Pressure: P _w , PSIG 178	- 12 = PSIA 190	
Temperature: T, °F 64	n = .85		F _{pv} (From Tables) 1.016	Gravity .638	

Starting SIPT (MV) - 1082 psig; Final SIPT (MV) - 1084 psig

$$\text{CHOKE VOLUME} = Q = C \times P_1 \times F_1 \times F_g \times F_{pv}$$

$$Q = 12.365 \times 188 \times .9962 \times .9721 \times 1.016 = 2287 \text{ MCF/D}$$

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

$$A_{of} = \left(\frac{1,006,009}{969,909} \right)^n = 1.0372^{.85} \times 2287 = 1.0315 \times 2287$$

$$A_{of} = 2359 \text{ MCF/D}$$

TESTED BY Jess Goodwin and R. A. Ullrich

WITNESSED BY _____

cc: E. J. Coel, Jr. (6)



L. D. Galloway