

El Paso Natural Gas Company

El Paso, Texas

August 14, 1957

DIRECT REPLY TO:
P. O. BOX 997
FARMINGTON, NEW MEXICO

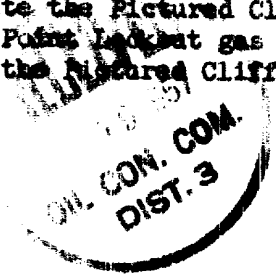
Mr. A. L. Porter
Secretary and Director
Oil Conservation Commission
Box 871
Santa Fe, New Mexico

Dear Sir:

This is a request for administrative approval for a well dually completed in the Blanco Mesa Verde Pool and the South Blanco Pictured Cliffs Extension Pool. The El Paso Natural Gas Company Rincon Unit No. 88 (PM) is located 1750 feet from the North line and 1650 feet from the East line of Section 13, 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 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 3410 feet with 250 sacks of cement. Top of cement at 1745 feet, which is above the top of the Pictured Cliffs formation at 3211 feet.
3. 5 1/2" liner set from 3327 feet to 5685 feet with 300 sacks of cement. The top of the liner was squeezed with 200 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 two intervals and fractured with water and sand.
7. The Pictured Cliffs formation was perforated in one interval 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 3485 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 13, Township 27 North, Range 7 West, to the Mesa Verde formation and the NE/4 of Section 13, 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.

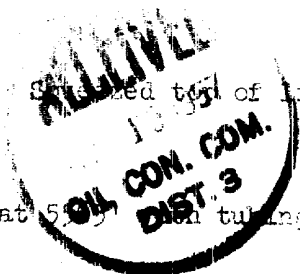
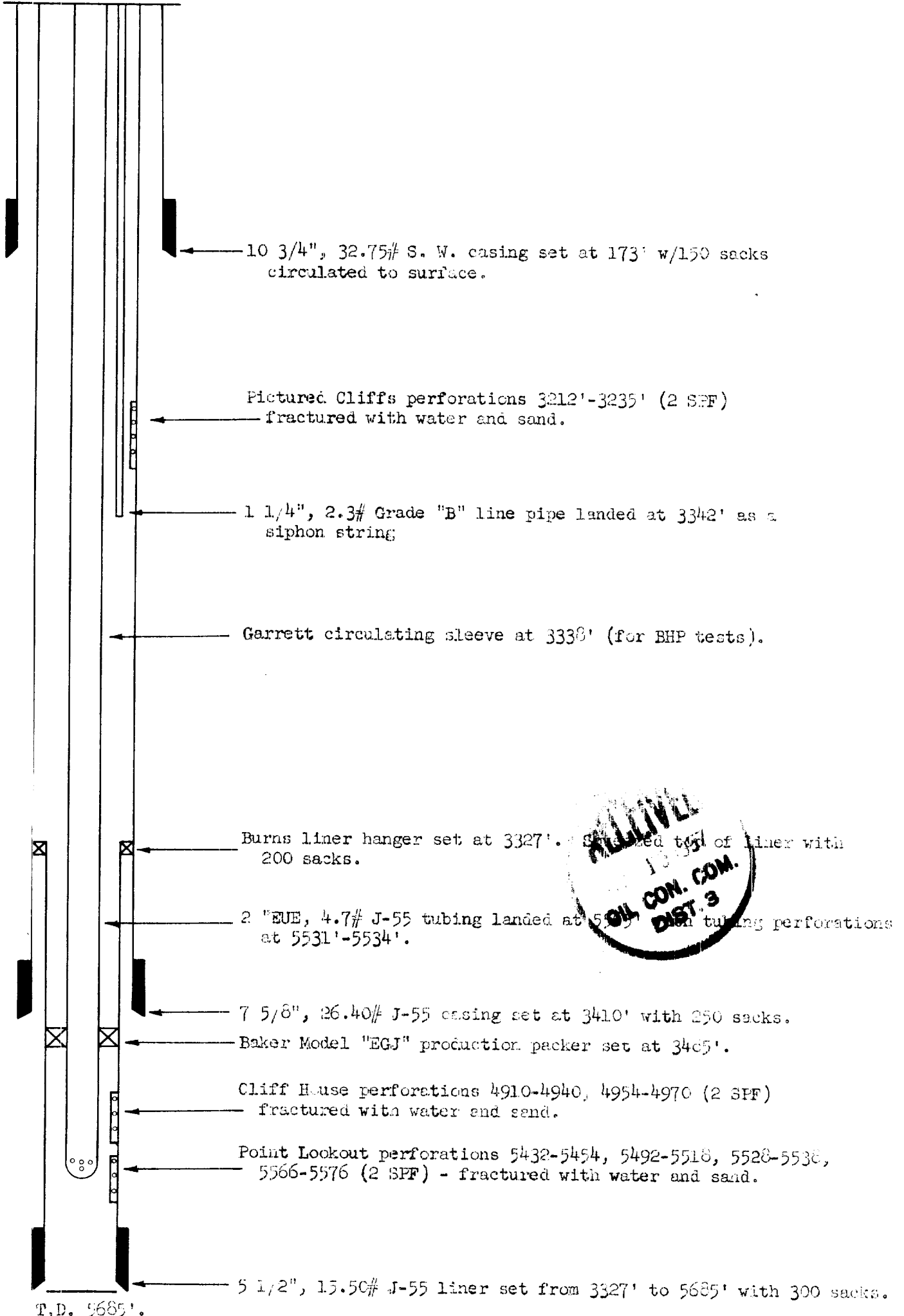
cc: Emery Arnold
R. L. Hamblin
Phil McGrath



SCHEMATIC DIAGRAM OF DUAL COMPLETION
 EPNG RINCON UNIT #83 (PM)
 NE/4 SECTION 13, T27N, R7W

Zero reference point 10.0'
 above tubing hanger

Dual String
 Xmas Tree



STATE OF NEW MEXICO)
)
COUNTY OF SAN JUAN)

I, Mack M. Mahaffey, being first duly sworn upon my oath depose and say as follows:

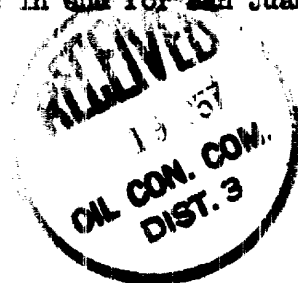
I am an employee of Baker Oil Tools, Inc., and that on June 23, 1957, I was called to the location of the El Paso Natural Gas Company Rincon Unit No. 88 (1M) Well located in the SWNE/4 of Section 13, Township 27N, Range 7 W, N.M.P.M. for the purpose of installing a production packer. Under my direct supervision a Baker Model "EGJ" production packer was set at 3485 feet. The production packer was properly set in accordance with the usual practices and customs of the industry.

Mack M. Mahaffey
Mack M. Mahaffey

Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 7 day of Aug, 1957.

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, N.M.

July 24, 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. 88, NE 13-27-7, 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 3485 feet. The Pictured Cliffs zone was tested through a 3/4" choke for three hours July 5, 1957 with the following data obtained:

Pictured Cliffs SIPC 1013 psig; shut-in 12 days.
Pictured Cliffs SIPT 1013 psig
Mesa Verde SIPT 927 psig

<u>Time</u>	<u>Flowing Pressure</u>	<u>Mesa Verde SIPT</u>	<u>Temp°F</u>
11:45	Opened casing	1089	56
12:00	446	1089	
12:15	433	1090	
12:30	366	1091	60
12:45	308	1091	62
2:45	194	1091	66

Working pressure tubing was 201 psig on the Pictured Cliff at end of test. The choke volume for the Pictured Cliffs test was 2480 MCF/D with an A.O.F. of 2575 MCF/D. The well was shut-in for 12 days and the Mesa Verde zone was tested July 17, 1957 through a 3/4" choke for 3 hours with the following data obtained:

Pictured Cliffs SIPT 1036 psig
Pictured Cliffs SIPC 1036 psig
Mesa Verde SIPT 1088 psig



<u>Time</u>	<u>Flowing Pressure</u>	<u>Pictured Cliffs SIPC</u>	<u>Temp °F</u>
1:21	Opened tubing	1036	
1:36	523	1038	
1:51	510	1039	
2:06	443	1039	
2:21	385	1039	
4:21	272	1040	63

The choke volume for the Mesa Verde test was 3458 MCF/D with an A.O.F. of 4366 MCF/D.

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

Very truly yours,

Tom B. Grant
Tom B. Grant, Jr.
Gas Engineer

TBG/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. Alsup

Date: July 17, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
RINCON UNIT NO. 88, Rio Arriba County, New Mexico.

Tested By: Tom Grant. Witnessed By: Fred Cook, Oil Conservation Commission

Location Sec. 13 T. 27 R. 7 .1750'N, 1650'E

Shut-In Pressure PC SIPC 1036 psig ; (Shut-in 12 days)
PC SIPT 1036 psig
MV SIPT 1088 psig0.750" Choke Volume 3458 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 4366 MCF/D

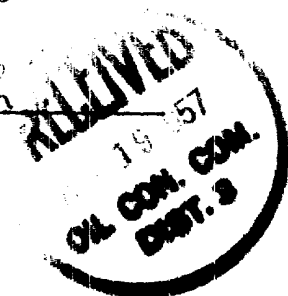
Working Pressure On Calculated = 569 psia

Producing Formation Mesa Verde

Stimulation Method Sand Water Frac.

Total Depth 5680 - c/o 5620

Field Blanco

H₂S Sweet to lead acetate.cc: D. H. Tucker
~~R. W. H. H. H.~~
W. T. Hollis
~~C. D. H. H. H.~~
W. M. Rodgers
~~W. H. H. H. H.~~
Drilling Department
B. D. Adams
Roland Hamblin
Jack Purvis
~~W. H. H. H. H.~~
C. C. Kennedy
E. J. Coel, Jr. (6)
A. J. Dudenhoeffer
FileBill Parrish
Dean Rittmann
H. H. Lines*L. D. Galloway*
L. D. GallowayBy: *J. H. H. H. H.*

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETIONDATE July 17, 1957

Operator El Paso Natural Gas		Lease Rincon No. 88	
Location 1750'N, 1650'E, Sec. 13-27-7		County Rio Arriba	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing Diameter 7-5/8	Set At: Feet 3398	Tubing Diameter 2"	Set At: Feet 5555
Pay Zone: From 4910	To 5576	Total Depth: 5680 - c/o 5620	
Stimulation Method Sand Water Frac.		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches 0.750	Choke Constant: C 12.365
Shut-In Pressure, Casing, PSIG 1036 PC	Shut-In Pressure, Tubing, PSIG 1088
Flowing Pressure: P, PSIG 272	Working Pressure: P _w , PSIG Calculated 569
Temperature, T, F 63	Eq. From Tables, Gravity 1.028 650
Days Shut-In 0.750	

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

$$Q = 12.365 \times 284 \times .9971 \times .9608 \times 1.028$$

3458

MCF/D

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

$$A_{of} = \left(\frac{1,210,000}{886,239} \right)^n \quad 1.3653^{.75} \times 3458 = 1.2627 \times 3458$$

$$A_{of} = 4366 \text{ MCF/D}$$
TESTED BY Tom GrantWITNESSED BY Fred Cook, Oil Conservation Commission

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

By: L. D. Galloway

L. D. Galloway



EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

Date: July 5, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
RINCON NO. 88, Rio Arriba County, New Mexico.

Tested By: Tom Grant

Location Sec. 13 T. 27 R. 7 1750'N, 1650'E

Shut-In Pressure	P.C. SIPT 1013	psig	(Shut-in 12 days)
	P.C. SIPT 1013	psig	
	M.V. SIPT 1089	psig	

0.750" Choke Volume 2480 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 2575 MCF/D

Working Pressure On tubing = 201 Psig

Producing Formation Pictured Cliff

Stimulation Method Sand Water Frac.

Total Depth Packer at 3485

Field Wildcat

H₂S Sweet to lead acetate.

Final SIPT Mesa Verde - 1091 psig

cc: D. H. Tucker

+++ ~~W. T. Hollis~~ +++

W. T. Hollis

+++ ~~E. J. Coe, Jr.~~ +++

W. M. Rodgers

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Drilling Department

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A. J. Dushoff

File

H. H. Lines

Bill Parrish

Dean Rittmann

Lewis D. Galloway
L. D. Galloway



(6)

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADUAL COMPLETION

DATE July 5, 1957

Operator El Paso Natural Gas Company		Lease Rincon No. 88	
Location 1750'N, 1650'E, Sec. 13-27-7		County Rio Arriba	State New Mexico
Formation Pictured Cliff Side		Pool Wildcat	
Casing: Diameter 5 1/2	Set At: Feet 3370-5685	Tubing: Diameter 1 1/4	Set At: Feet 3332
Pay Zone: From 3212	To 3235	Total Depth: Packer at 3485	
Stimulation Method Sand Water Frac.		Flow Through Casing X	Flow Through Tubing

Choke Size, Inches 0.750		Choke Constant: C 12.365	
Shut-In Pressure, Casing, PSIG 1013	12 PSIA 1025	Days Shut-In 12	Shut-In Pressure, Tubing PSIG 1013
Flowing Pressure: P PSIG 194	12 PSIA 206		Working Pressure: P _w PSIG 201
Temperature: T 66	F _n 0.850		F _{pv} (From Tables) 1.019
			Gravity 0.650

SIPT M.V. - 1089. Final SIPT M.V. Final SIPT M.V. - 1091 psig

CHOKE VOLUME = $Q \cdot C \cdot P_c \cdot F_p \cdot F_g \cdot F_{pv}$

$$Q \cdot 12.365 \times 206 \times .9943 \times .9608 \times 1.019 = 2480 \text{ MCF/D}$$

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

$$A_{of} \left(\frac{1,050,625}{1,005,256} \right)^n = 1.0451^{.85} \times 2480 = 1.0382 \times 2480$$

$$A_{of} = 2575 \text{ MCF/D}$$

TESTED BY Tom Grant

WITNESSED BY _____



L. D. Galloway
L. D. Galloway