

El Paso Natural Gas Company

El Paso, Texas

June 7, 1957

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

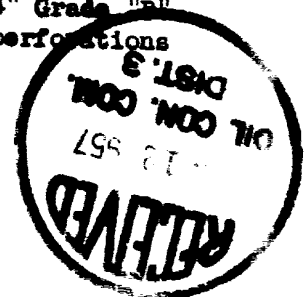
Mr. A. L. Porter
Secretary and Director
Oil Conservation Commission
Box 871
Santa Fe, New Mexico

Dear Sir:

This is a request for administrative approval for a well dually completed in the Blanco Mesa Verde Pool and the South Blanco Extension Pictured Cliffs Pool. The El Paso Natural Gas Company Rincon Unit No. 100 (PM) is located 990 feet from the North line and 990 feet from the East line of Section 26, 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 effected in the following manner:

1. 10-3/4" surface casing set at 172' with 125 sacks cement circulated to surface.
2. 7-5/8" intermediate casing set at 3498' with 250 sacks cement. Top of cement by temperature survey at 2010', which is above the top of the Pictured Cliffs at 3305'.
3. 5-1/2" liner set from 3450' to 5757' with 300 sacks 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 section was perforated in five 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 fracturing, and completion was accomplished by setting a Baker Model "EGJ" packer on 2" EUE tubing at 3527' with the tubing perforations between the Point Lookout and Cliff House perforations. 1-1/4" Grade "B" line pipe was run as a siphon string with tubing perforations opposite the Pictured Cliffs perforations.



COPY

9. The Mesa Verde gas will be produced through the 2" EUE tubing and the Pictured Cliffs gas through the casing.
10. A Garrett side door flow nipple was installed in the 2" EUE tubing string just below the Pictured Cliffs perforations. This flow nipple will enable bottom hole pressure tests to be made in the future if it be so required.
11. Initial potential tests have been run, showing commercial production in all three zones. A packer leakage test has also been run, the test being witnessed by a member of the Aztec office of the Oil Conservation Commission. Results of this test show no communication in the well bore between the two formations.

Administrative approval is requested for this dual completion to allow production from both producing formations in order to eliminate the high initial cost of drilling two separate wells.

Approval for dually completing this well has been received from Lowry Oil Company, the owners of the N/2NE/4 of Section 35, Township 27 North, Range 6 West and the NE/4NW/4 of Section 35, Township 27 North, Range 6 West - both of which adjoin the drilling block. Enclosed is a letter of approval from the offset operator. Also enclosed are:

- (a) Two copies of plats showing location of this well and the offset operator.
- (b) Two copies of the schematic diagram of the mechanical installations.
- (c) Two copies of the affidavit from the packer setting company stating that the packer used was set at the depth shown.
- (d) Two copies of the packer leakage tests as observed by a member of the Oil Conservation Commission.
- (e) Two copies of the initial potential tests showing commercial production from the two formations.

It is intended to dedicate the E/2 of Section 26, Township 27 North, Range 6 West to the Mesa Verde formation and the NE/4 of Section 26, Township 27 North, Range 6 West is dedicated to the Pictured Cliffs formation.

Any further information required will be furnished upon your request. Thank you for your consideration of the matter.

Yours very truly,

ORIGINAL SIGNED E. J. COEL

E. J. Coel
Senior Petroleum Engineer

EJC/gks

Encl.

cc: Emery Arnold ✓
R. L. Hamblin
Phil McGrath



EL PASO NATURAL GAS COMPANY

P. O. Box 997
Farmington, N.M.

April 15, 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 Unit # 100, Rio Arriba
County, New Mexico.

Dear Mr. Arnold:

This well was dually completed in the Pictured Cliffs and Mesa Verde formations. A production packer was set at 3527 feet. The Pictured Cliffs zone was tested April 4, 1957 and the following information was obtained:

SIPC & SIPT (Pictured Cliffs) - 1005 psig; shut-in 10 days.
SIPT (Mesa Verde) - 1047 psig

The three hour open flow test through a 3/4" choke started at 11:00 A.M.

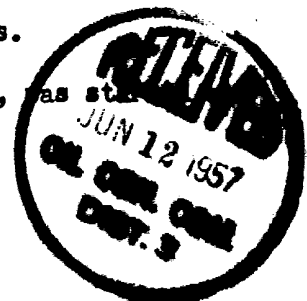
<u>Time</u>	<u>Casing Choke Press. Psig</u>	<u>Tubing Pressure (M.V.) Psig</u>	<u>Temp. °F</u>
11:00	1005	1047	
11:15	506	1046	
11:30	427	1047	
11:45	342	1047	
12:00	291	1047	
12:30	246	1047	
1:00	217	1048	
1:30	200	1048	
2:00	183	1048	56

The calculated choke volume was 2717 MCF/D and the A.O.F. was 2809 MCF/D.

On April 12, 1957 the Mesa Verde zone was tested and the following information was obtained:

SIPC (Pictured Cliffs) - 1022 psig
SIPT (Mesa Verde) - 1062 psig; shut-in 8 days.

The three hour open flow test period, through a 3/4" choke, was started at 10:30 A.M. on April 12, 1957.



<u>Time</u>	<u>Tubing Choke Press. Psig Mesa Verde</u>	<u>Casing Press. (P.C.) Psig</u>	<u>Temp. °F</u>
10:30	1062	1022	
10:45	557	1025	
11:00	501	1026	
11:15	490	1026	
11:30	460	1026	
12:00	430	1026	
12:30	406	1026	
1:00	396	1026	
1:30	390	1025	64

The calculated choke volume was 4839 MCF/D and the A.O.F. was 9049 MCF/D.

Very truly yours,

R. A. Ullrich
 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. Alsup

Date: April 4, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
RINCON UNIT # 100, Rio Arriba County, New Mexico.

Tested By: R. A. Ullrich

Location Sec. 26 T. 27 R. 6 990'S, 990'E

	Pictured Cliff	SIPT 1005	psig	10	
Shut-In Pressure	Pictured Cliff	SIPT 1005	psig	(Shut-in	days)
	Mesa Verde	SIPT 1047	psig		

0.750" Choke Volume	2717	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	2809	MCF/D
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Working Pressure On tubing	187	Psig
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Producing Formation	Pictured Cliffs
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Stimulation Method	Sand Water Frac
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Total Depth	5760 - c/o - 5700. Packer at 3527.
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Field	Wildcat
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H2S	Sweet to lead acetate.
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Final SIPT (Mesa Verde) - 1048 psig

cc: D. H. Tucker

W. T. Hollis

W. M. Rodgers

Drilling Department

B. D. Adams

Roland Hamblin

Jack Purvis

W. V. Holik

C. C. Kennedy

E. J. Coel, Jr. (6)

A. J. Dudenhoefter

File

H. H. Lines

Bill Parrish

Dean Rittmann

Lewis D. Galloway
L. D. Galloway



EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

Date: April 12, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
RINCON UNIT # 100, Rio Arriba County, N.M.

Tested By: R. A. Ullrich

Location Sec. 26 T. 27 R. 6 , 990'S, 990'E

Shut-In Pressure	Pictured Cliffs	SIPC	1022	psig	(Shut-in 8 days)
	Pictured Cliffs	SIPT	1023	psig	
	Mesa Verde	SIPT	1062	psig	

0.750" Choke Volume	4839	MCF/D @ 14.7 psia and 60° F. for 0.6 gravity gas. Flow through tubing for 3 hours.
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Calculated 3 Hour Absolute Open Flow	9049	MCF/D
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Working Pressure On casing	Calculated	= 814	Psig
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Producing Formation	Mesa Verde
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Stimulation Method	Sand Water Frac
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Total Depth	5760 - c/o - 5700. Packer at 3527.
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Field	Blanco
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H ₂ S	Sweet to lead acetate.
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Final SIPC (Pictured Cliff) - 1025 psig

cc: D. H. Tucker

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W. T. Hollis

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W. M. Rodgers

~~*****~~

Drilling Department

B. D. Adams

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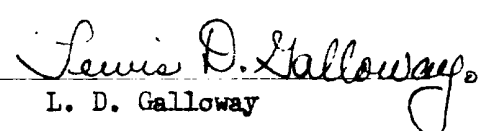
A. J. Dudenhoeffer

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H. H. Lines

Bill Parrish

Dean Rittmann


 L. D. Galloway

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

Operator El Paso Natural Gas Company		Lease Rincon Unit # 100	
Location 990'S, 990'E, Sec. 26-27-6		County Rio Arriba	State New Mexico
Formation Pictured Cliffs		Pool Wildcat	
Casing: Diameter 5$\frac{1}{2}$	Set At: Feet 5757	Tubing: Diameter 1$\frac{1}{4}$	Set At: Feet 3331
Pay Zone: From 3310	To 3356	Total Depth 5760 - c/o - 5700. Packer at 3527	
Stimulation Method Sand Water Frac		Flow Through Casing X	Flow Through Tubing

Choke Size, Inches 0.75	Choke Constant: C 14.1605			
Shut-In Pressure, Casing, PSIG 1005	- 12 = PSIA 1017	Days Shut-In 10	Shut-In Pressure, Tubing, PSIG 1005	- 12 = PSIA 1017
Flowing Pressure, P, PSIG 183	- 12 = PSIA	195	Working Pressure, P _w , PSIG 187	- 12 = PSIA 199
Temperature, T, F 56		.85	F _{pv} (From Tables) 1.020	Gravity .650

SIPT (Mesa Verde) - 1047 psig. Final SIPT (M.V.) - 1048 psig

CHOKE VOLUME - Q C x P_i x F_v x F_g x F_{gv}

$$Q = 14.1605 \times 195 \times 1.0039 \times .9608 \times 1.020 = 2717 \text{ MCF/D}$$

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

$$A_{of} \left(\frac{1,034,289}{994,688} \right)^n (1.0398)^{.85} \times 2717 = 1.0337 \times 2717$$

$$A_{of} = 2809 \text{ MCF/D}$$

TESTED BY R. A. Ullrich

WITNESSED BY

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



L. D. Galloway

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADUAL COMPLETIONDATE April 12, 1957

Operator El Paso Natural Gas		Lease Rincon Unit # 100	
Location 990'S, 990'E, Sec. 26-27-6		County Rio Arriba	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing: Diameter 5½	Set At: Feet 5757	Tubing: Diameter 2	Set At: Feet 5393
Pay Zone: From 5000	To 5660	Total Depth: 5760 - c/o - 5700. Packer set at 3527	
Stimulation Method Sand Water Frac		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches 0.75	Choke Constant: C 12.3650			
Shut-In Pressure, Casing, PSIG P.C. 1022	- 12 - PSIA	Days Shut-In 8	Shut-In Pressure, Tubing, PSIG 1062	- 12 - PSIA 1074
Flowing Pressure: P, PSIG 390	- 12 - PSIA	402	Working Pressure: Pw, PSIG Calculated	- 12 - PSIA 808
Temperature: T, °F 64	n =	.75	Fpv (From Tables) 1.048	Gravity .693

Final SIPC (P.C.) - 1025 psig

CHOKE VOLUME - $Q = C \times P_i \times F_i \times F_g \times F_{pv}$


$$Q = 12.365 \times 402 \times .9962 \times .9325 \times 1.048 = 4839 \text{ MCF/D}$$

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

$$A_{of} \left(\frac{1,153,476}{500,612} \right)^n (2.3041)^{.75} \times 4839 = 1.870 \times 4839$$

Aof 9049 MCF DTESTED BY R. A. UllrichWITNESSED BY
cc: E. J. Coel, Jr. (6)

L. D. Galloway
L. D. Galloway

		
SCALE	DATE	No.
DRAWN BY	CHECKED BY	

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 25, 1957, I was called to the location of the El Paso Natural Gas Company Rincon Unit No. 100 (PM) Well located in the NE/4 NE/4 of Section 26, Township 27 North, Range 6 West, 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 3527 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 9 day of MAY, 1957.

Ken G. MacLachlan
Notary Public in and for San Juan
County, New Mexico

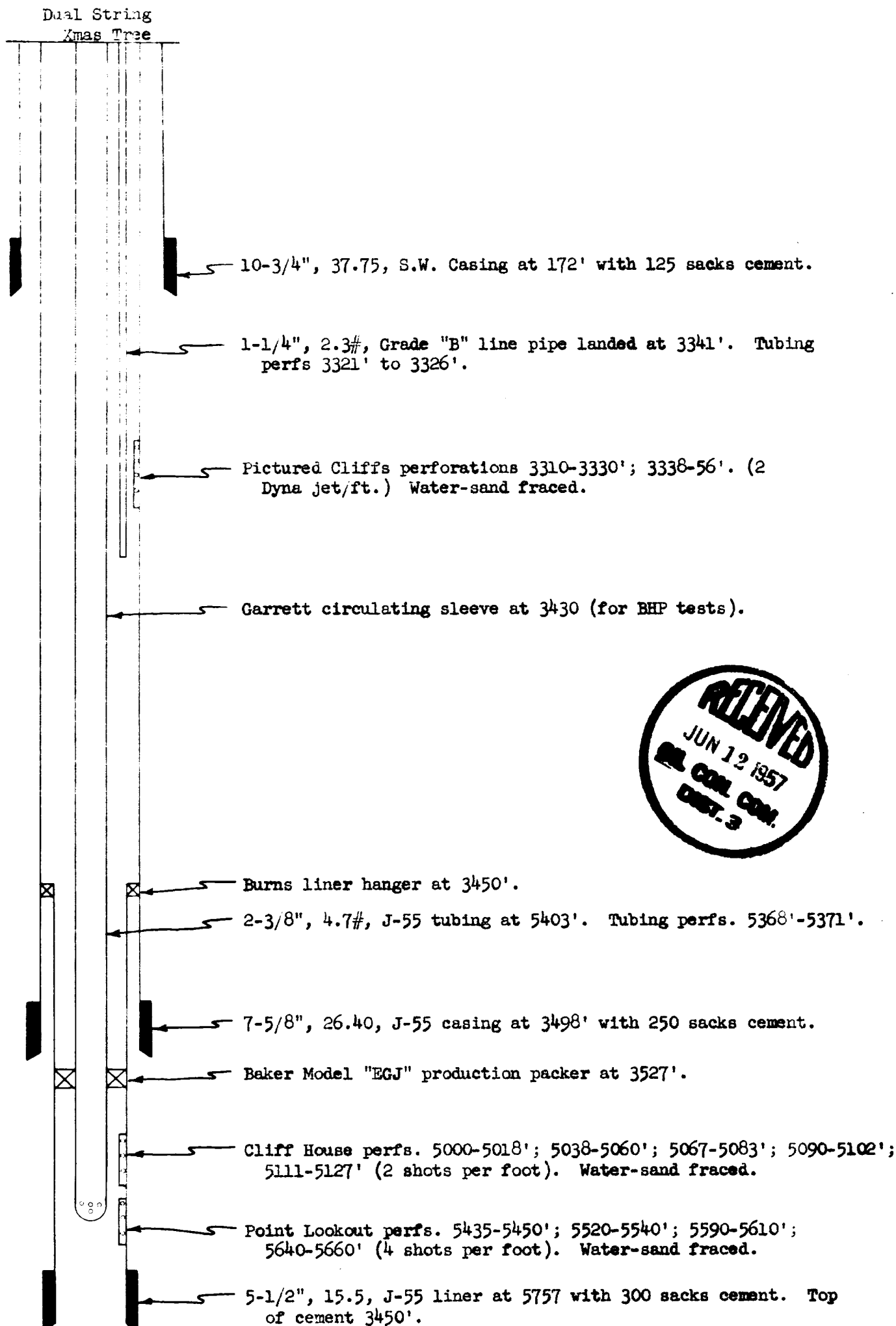
My commission expires:

7-24-60



SCHEMATIC DIAGRAM OF DUAL COMPLETION
 EPNG RINCON NO. 100 (PM)
 (NE Section 26-T27N-R6W)

Measurement reference point is 10.08'
 above top flange of tubing hanger



T.D. 5763'.