

El Paso Natural Gas Company

El Paso, Texas

October 4, 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 South Blanco Pictured Cliffs Extension Pool and in the Blanco Mesa Verde Pool. The El Paso Natural Gas Company Rincon Unit No. 99 (PM) is located 990 feet from the North line and 1020 feet from the East line of Section 27, 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 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 3325 feet with 250 sacks of cement. Top of the cement at 2280 feet, which is above the top of the Pictured Cliffs at 3131 feet.
3. 5 1/2" liner set from 3255 feet to 5523 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 six intervals and fractured with water and sand.
6. The Cliff House section was perforated in four intervals and fractured with water and sand.
7. 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 3361 feet with the tubing perforations set opposite the Point Lookout perforations. 1 1/4" EUE tubing 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" 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 offset operator to the drilling block of this well has been notified of intentions to dually complete; and has sent approval by means of registered letter. Enclosed is a copy of this letter. Also 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.
- (e) Two copies of the plat showing the location of the well and the offset operator.

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

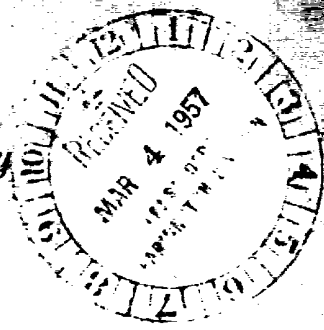
Encl.

cc: Emery Arnold
Sam Smith
Phil McGrath

El Paso Natural Gas Company

El Paso, Texas

February 12, 1957



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

Lowry Oil Company
P. O. Box 8008
Albuquerque, New Mexico



Re: Kincaid #99 Well

Gentlemen:

El Paso Natural Gas Company proposes a Dual Completion well to be located in the E/2 of Section 27, Township 27 North, Range 6 West, Rio Arriba County, New Mexico. This well will be dually completed in both the Pictured Cliffs and Mesa Verde formations.

Inasmuch as you are the owner of the NW/4 NE/4 of Section 35, Township 27 North, Range 6 West, and the N/2 NE/4 of Section 34, Township 27 North, Range 6 West, which adjoins the drilling block, and if you have no objections to this proposed dual completion, we would appreciate your signing the attached copy of this letter and returning same to this office.

With kindest regards, we remain,

Very truly yours

P. W. Bittick

TWB:BG:cc

P. W. Bittick
Division Landman
Lease Department

The above mentioned Dual Completion well is hereby approved.

LOWRY OIL COMPANY

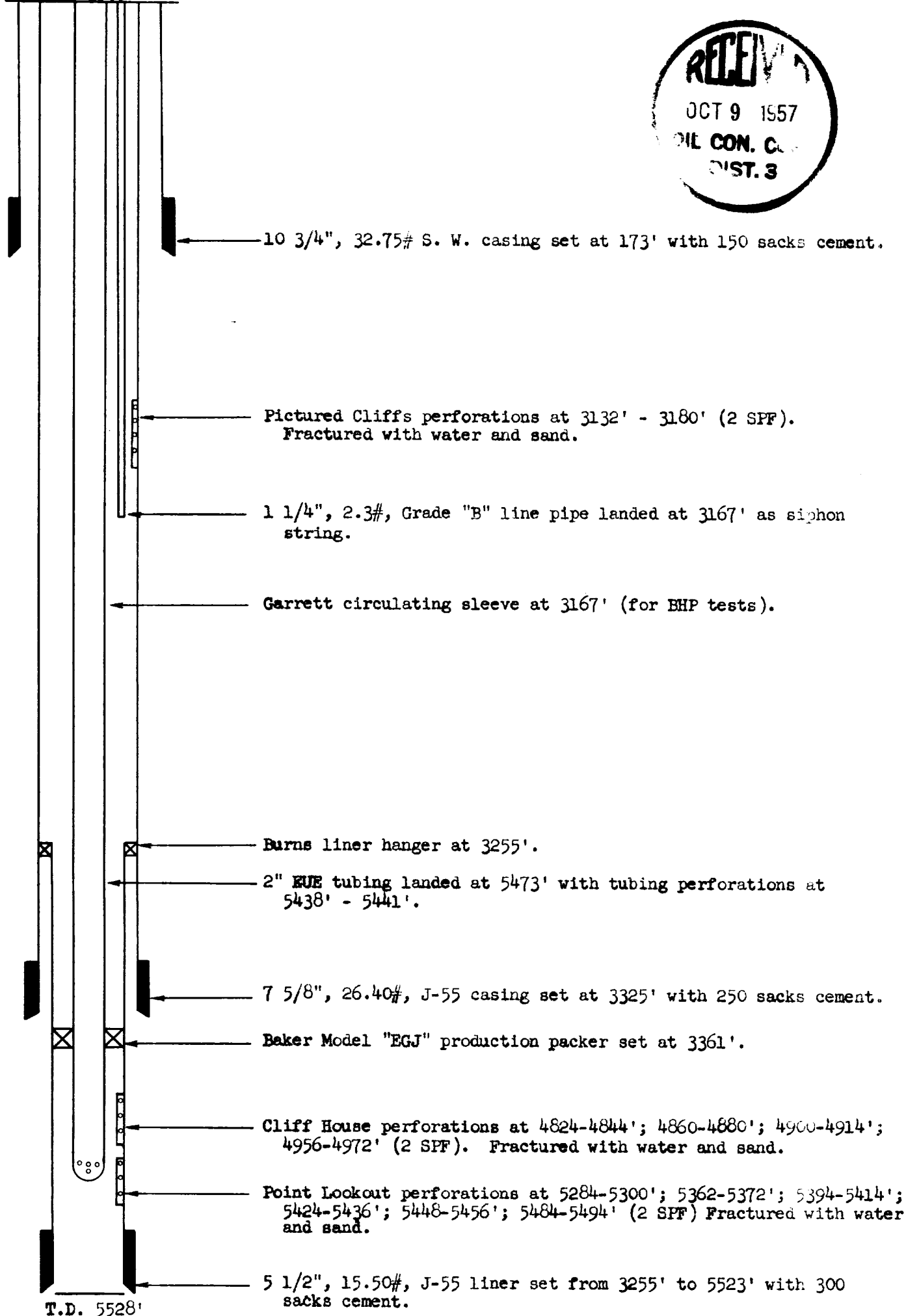
By: *C. J. [Signature]*

[Signature] 1, 1957.

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. Rincon Unit No. 99 (PM)
(NE/4 Section 27, T27N, R6W)

Zero reference point 10.0' above tubing head.

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 August 19, 1957, I was called to the location of the El Paso Natural Gas Company Rincon Unit No. 99 (PM) Well located in the NE/4 NE/4 of Section 27, 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 "EGJ" Production Packer was set in this well at 3361 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 7 day of Oct., 1957.

Paul D. McLaughlin
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 16, 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. 99, NE 27-27-6, 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 3361 feet. The Pictured Cliffs zone was tested through a 3/4" choke for three hours September 4, 1957 with the following data obtained:

Pictured Cliffs SIPC - 1035 psig; shut-in 15 days
Pictured Cliffs SIPT - 1035 psig

Mesa Verde SIPT - 1047 psig; shut-in 15 days

<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>
1:30	Open	1047		
1:45	674	1047		64
2:00	611	1049		66
2:15	534	1050		67
2:30	475	1050		68
4:30	281	1050	294	68

The choke volume for the Pictured Cliffs was 3561 MCF/D with an A.O.F. of 3842 MCF/D.

The Mesa Verde zone was tested September 12, 1957 with a 3/4" choke for 3 hours with the following data obtained:

Pictured Cliffs SIPC - 1046 psig; shut-in 8 days
Pictured Cliffs SIPT - 1045 psig

Mesa Verde SIPT - 1052 psig; shut-in 23 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>
12:00	Open	1046		
12:15	642	1048		65
12:30	568	1047		65
12:45	481	1047		66
1:00	414	1045		65
3:00	355	1045	Calculated 722	66

The choke volume for the Mesa Verde test was 4432 MCF/D with an A.O.F. of 7193 MCF/D.

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

Very truly yours,

S. V. Roberts

S. V. Roberts
Gas Engineer

SVR/jla

cc: E. J. Coel, Jr.
W. M. Rodgers
E. S. Oberly (6)
File



EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

From: Gas Engineering Department

Date: September 12, 1957

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well,
RINCON NO. 99, Rio Arriba County, New Mexico.

Tested By: G. V. Roberts

Location Sec. 27 T. 27N R. 6W 1025'N, 1025'E

Shut-In Pressure P.C. SIPC 1046 psig ; (Shut-in 23 days)
P.C. SIPT 1045 psig
M.V. SIPT 1052 psig

0.750" Choke Volume 4,432 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 7,193 MCF/D

Working Pressure On Calculated = 722 Psig

Producing Formation Mesa Verde

Stimulation Method Sand Water Frac.

Total Depth 5520 - c/o 5510

Field Blanco

H2S Sweet to lead acetate.

Final SIPC (PC) - 1045 psig

cc: D. H. Tucker

~~W. M. Rodgers~~~~Wayne Cheek~~~~Drilling Department~~

W. M. Rodgers

Wayne Cheek

Drilling Department

B. D. Adams

Roland Hamblin

Jack Purvis

~~W. M. Rodgers~~

C. C. Kennedy

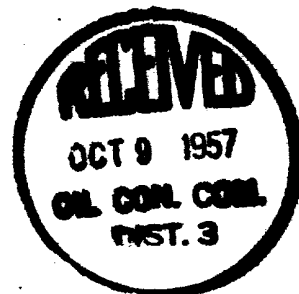
E. J. Coel, Jr.

A. J. Dudenhoeffer

File

Bill Parrish
Dean Rittmann
E. S. Oberly (6)
Samuel Smith

Lewis D. Galloway
L. D. Galloway



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

Operator El Paso Natural Gas Company		Lease Rincon No. 99	
Location 1025'N, 1025'E, Sec. 27-27-6		County Rio Arriba	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing: Diameter 7-5/8	Set At: Feet 3324	Tubing: Diameter 2"	Set At: Feet 5473
Pay Zone: From 4824	To 5494	Total Depth: 5520 - c/o 5510	
Stimulation Method Sand Water Frac.		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches 0.750		Choke Constant: C 12.365		5-1/2" liner 3255-5523	
Shut-In Pressure, Casing, PSIG PC 1046	- 12 = PSIA 1058	Days Shut-In 23	Shut-In Pressure, Tubing PSIG MV - 1052	+ 12 = PSIA 1064	
Flowing Pressure: P PSIG 355	- 12 = PSIA 367		Working Pressure: Pw PSIG Calc.	+ 12 = PSIA 734	
Temperature: T °F 66	n = 0.75		Fpv (From Tables) 1.038	Gravity 0.670	

SIPC (PC) Initial - 1046 psig; Final - 1045 psig. Packer at 3361. Sleeve - 3167
1-1/4" - 3167

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

$$Q = 12.365 \times 367 \times .9943 \times .9463 \times 1.038 = 4432 \text{ MCF/D}$$

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

$$Aof = \left(\frac{1,132,096}{593,340} \right)^n = 1.9080^{.75} \times 4432 = 1.6230 \times 4432$$

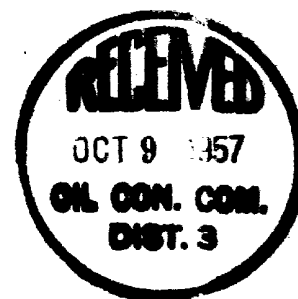
$$Aof = 7193 \text{ MCF/D}$$

TESTED BY S. V. Roberts and R. R. Davis

WITNESSED BY _____

cc: E. S. Oberly (6)

L. D. Galloway
L. D. Galloway



EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

Date: September 4, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well,
RINCON NO. 99, Rio Arriba County, New Mexico.

Tested By: S. V. Roberts and R. R. Davis

Location Sec. 27 T. 27 R. 6 .1025'N, 1025'E

Shut-in Pressure P.C. SIPC 1035 psig ; (Shut-in 15 days)
P.C. SIPT 1035 psig
M.V. SIPT 1047 psig

0.750" Choke Volume 3561 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 3842 MCF/D

Working Pressure On tubing = 294 Psig

Producing Formation Pictured Cliffs

Stimulation Method Sand Water Frac.

Total Depth 5520 - c/o 5510

Field Undesignated

H₂S Sweet to lead acetate.

SIPT (M.V.) - Final 1050 psig

cc: D. H. Tucker

Bill Parrish

~~W. T. Hollis~~

Dean Rittmann

W. T. Hollis

~~W. M. Rodgers~~

W. M. Rodgers

Wayne Cheek

Drilling Department

B. D. Adams

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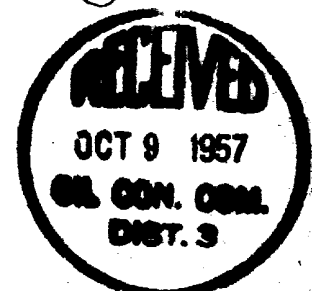
C. C. Kennedy

E. J. Coel, Jr. (6)

A. J. Dudenhoeffer

File

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. 99	
Location 1025'N, 1025'E, Sec. 27-27-6		County Rio Arriba	State New Mexico
Formation Pictured Cliffs		Pool Undesignated	
Casing: Diameter 7-5/8"	Set At: Feet 3324	Tubing: Diameter 1-1/4	Set At: Feet 3167
Pay Zone: From 3132	To 3180	Total Depth: 5520 - c/o 5510	
Stimulation Method Sand Water Frac.		Flow Through Casing X	Flow Through Tubing

Choke Size, Inches 0.750		Choke Constant: C 12.365		5-1/2" liner - 3255-5523	
Shut-In Pressure, Casing, PSIG 1035	+ 12 = PSIA 1047	Days Shut-In 15	Shut-In Pressure, Tubing PSIG 1035	+ 12 = PSIA 1047	
Flowing Pressure: P PSIG 281	+ 12 = PSIA 293		Working Pressure: P _w PSIG 294	+ 12 = PSIA 306	
Temperature: T °F 68	n = 0.85		Fpv (From Tables) 1.027	Gravity .645	

SIPT (MV) - Initial 1047 psig; Final 1050 psig. Packer at 3361. Sleeve at 3167. 2" at 5473

CHOKE VOLUME = Q = C x P_i x F_i x F_g x F_{pv}

$$Q = 12.365 \times 293 \times .9924 \times .9645 \times 1.027 = 3561 \text{ MCF/D}$$

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

$$Aof = \left(\frac{1,096,209}{1,002,573} \right)^n = 1.0933^{.85} \times 3561 = 1.0788 \times 3561$$

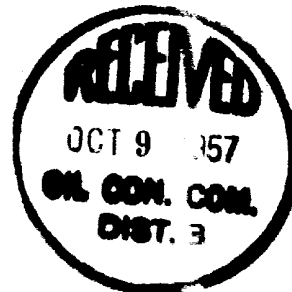
$$Aof = 3842 \text{ MCF/D}$$

TESTED BY S. V. Roberts and R. R. Davis

WITNESSED BY No witness available

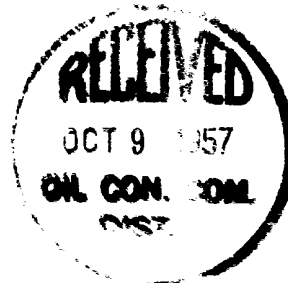
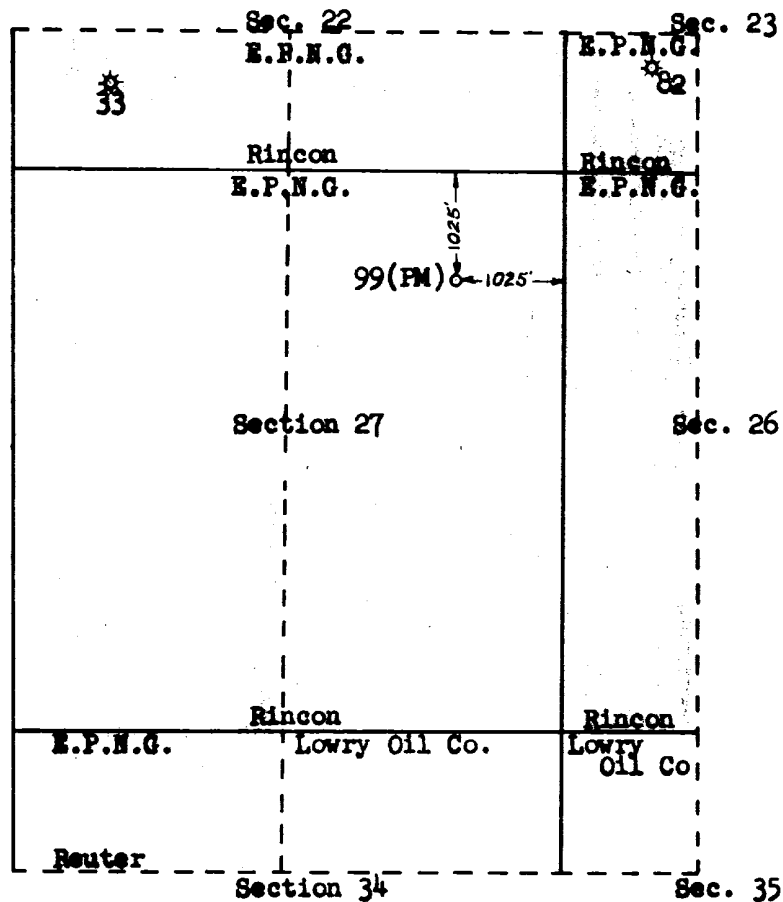
cc: E. J. Coel, Jr. (6)

L. D. Galloway
L. D. Galloway



PLAT SHOWING LOCATION OF DUALY COMPLETED
EL PASO NATURAL GAS RINCON UNIT NO. 99 (FM)
AND OFFSET ACREAGE

T-27-N, R-6-W



EL PASO NATURAL GAS COMPANY
EL PASO, TEXAS

SCALE	DATE	No.
DRAWN BY	CHECKED BY	