9. 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, eleminating the high initial cost of drilling two separate wells.

The offset operators to the drilling block of this well have been notified of intentions to dually complete by registered letter, and have subsequently given their approval. Enclosed is a copy of the letter of approval. 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 plats showing the location of the well and the offset operators.

It is intended to dedicate the E/2 of Section 31, Township 27 North, Range 8 West to the Mesa Verde formation and the NE/4 of Section 31, Township 27 North, Range 8 West to the Pictured Cliffs formation.

Any further information required will be furnished upon your request. Thank you for you 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

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 28, 1957, I was called to the location of the El Paso Natural Gas Company Bolack No. 9-C (PM) Well located in the SE/4 NE/4 of Section 31, Township 27 North, Range 8 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 4220 feet in accordance with the usual practices and customs of the industry.

Mack M. Mahaffey

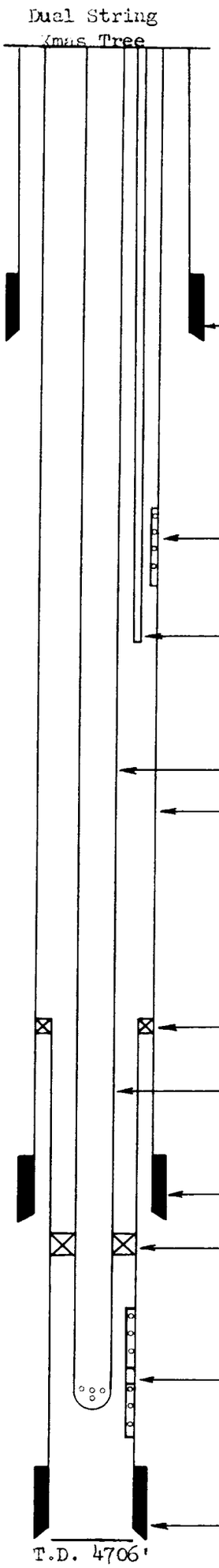
Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 7 day of Oct., 1957.

Notary Public in and for San Juan County, New Mexico

My commission expires February 24, 1960.

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. Bolack No. 9-C (PM)
(NE/4 Section 31, T27N, R8W)

Zero reference point 10.0' above tubing head.



10 3/4", 32.75#, S. W. casing set at 174' with 225 sacks cement.

Pictured Cliffs perforations at 2018-2070' (2 SPF) fractured with water and sand.

1 1/4", 2.3#, Grade "B" line pipe landed at 2080' as siphon string.

Garrett circulating sleeve at 2090' (for BHP tests).

Two stage cement collar at 1618'.

Burns liner hanger at 4177'.

2" EUE tubing landed at 4383' with tubing perforations at 4347-4350'.

7 5/8", 26.4#, J-55 casing set at 4245', cemented in two stages 150 sacks each stage. Squeezed 150 sacks cement through perforations at 2200'.

Baker Model "EGJ" production packer set at 4220'.

Point Lookout perforations at 4330-4382; 4410-4420' (2 SPF) Fractured with water and sand.

5 1/2", 15.50#, J-55 liner set from 4177' to 4693' with 140 sacks cement. Circulated 25 sacks cement through perforations at 4269' - 4270' and leak in lead seat of liner hanger.

EL PASO NATURAL GAS COMPANY

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

September 17, 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, Bolack No. 9-C, NE 31-27-8, San Juan 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 4220 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours September 6, 1957 with the following data obtained:

Pictured Cliffs SIPC - 686 psig; shut-in 9 days
Pictured Cliffs SIPT - 686 psig

Mesa Verde SIPT - 1068 psig; shut-in 9 days.

Time Minutes	MV Flowing Pressure Tubing Psig	PC SIPC Psig	MV Working Pressure, Psig	Temp °F
11:06	Opened	686		
11:21	352	682		70
11:36	320	687		72
11:51	305	687		73
12:06	293	687		74
2:06	235	687	Calculated 440	75

The choke volume for the Mesa Verde was 2,830 MCF/D with an A.O.F. of 3,271 MCF/D.

The Pictured Cliffs zone was tested September 13, 1957 with a 3/4" choke for 3 hours with the following data obtained:

Pictured Cliffs SIPT - 693 psig; shut-in 16 days
Pictured Cliffs SIPT - 693 psig

Mesa Verde SIPT - 1078 psig; shut-in 7 days.

Time Minutes	PC Flowing Pressure Casing Psig	MV SIPT Psig	PC Working Pressure, Psig	Temp °F
11:10	Open	1078		
11:25	235	1078		66
11:40	177	1078		66
11:55	170	1078		67
12:10	165	1078		68
2:10	152	1078	157	70

The choke volume for the Pictured Cliffs test was 1,964 MCF/D with an A.O.F. of 2,065 MCF/D.

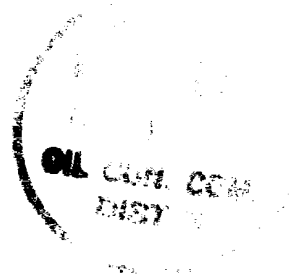
The results of the above tests indicate there is no packer leakage.

Very truly yours,

S. V. Roberts
Gas Engineer

SVR/jla

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



Form C-124 (Rev. 8-56)

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

From: Gas Engineering Department

Date: September 6, 1957

Place: Farmington, New Mexico

(Corrected Copy)

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, BOLACK NO. 9-C, San Juan County, New Mexico.

Tested By: S. V. Roberts and Jess Goodwin

Location ..... Sec. 31 T. 27N R. 8W ,1650'N, 990'E

Shut-In Pressure ..... PC SIPC 686 psig ; (Shut-in 9 days)
PC SIPT 686 psig
MVSIPT 1068

0.750" Choke Volume ..... 2830 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 ..... 3271 MCF/D

Working Pressure On Calculated ..... = 440 Psig

Producing Formation ..... Mesa Verde

Stimulation Method ..... Sand Water Frac.

Total Depth ..... 4700 - c/o 4430

Field ..... Blanco

H_2S ..... Sweet to lead acetate.

SIPC (PC) - Final 687 psig

L. D. Galloway

L. D. Galloway

cc: D. H. Tucker
~~R. R. Hawkins~~
W. T. Hollis
~~C. C. Heller~~
W. M. Rodgers
Wayne Cheek
Drilling Department
B. D. Adams
Roland Hamblin
Jack Purvis
~~V. V. Holt~~
C. C. Kennedy
E. J. Coel, Jr. (6)
A. J. Dudenhoeffer
File

Bill Parrish
Dean Rittmann

Well made oil and water in considerable amounts throughout the test.

FORM 23-13 1-57

EL PASO NATURAL GAS COMPANY

DUAL COMPLETION

OPEN FLOW TEST DATA

DATE September 6, 1957

Operator: El Paso Natural Gas Company		Lease: Bolack No. 9-C	
Location: 1650'N, 990'E, Sec. 31-27-8		County: San Juan	State: New Mexico
Formation: Mesa Verde		Pool: Blanco	
Casing: Diameter: 7-5/8	Set At: Feet: 4235	Tubing: Diameter: 2"	Set At: Feet: 4373
Pay Zone: From: 4330	To: 4420	Total Depth: 4700 - c/o 4430	
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 - 4182 to 4698	
Shut-in Pressure, Casing, PSIG: PC 686	+ 12 = PSIA: 698	Days Shut-in: 9	Shut-in Pressure, Tubing PSIG: MV - 1068	+ 12 = PSIA: 1080	
Flowing Pressure: P PSIG: 235	+ 12 = PSIA: 247		Working Pressure: Pw PSIG: Calc.	+ 12 = PSIA: 452	
Temperature: T °F: 75	n = 0.75		Fpv (From Tables): 1.026	Gravity: 0.717	

SIPC (PC) - Final - 687 psig. Packer at 4220. Sleeve at 2091 1-1/4" at 2070

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

$Q = 12.365 \times 247 \times .9859 \times .9161 \times 1.026 = 2830$ MCF/D

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

$Aof = \left(\frac{1,166,400}{962,096} \right)^n = 1.2123^{.75} \times 2830 = 1.1557 \times 2830$

Aof 3271 MCF/D

TESTED BY S. V. Roberts and Jess Goodwin

WITNESSED BY

L. D. Galloway

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

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

From: Gas Engineering Department

Date: September 13, 1957

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, BOLACK NO. 9-C, San Juan County, New Mexico.

Tested By: S. V. Roberts

Location ..... Sec. 31 T. 27N R. 8W , 1650'N, 990'E

Shut-In Pressure ..... P.C. SIPC 693 psig ; (Shut-in 16 days)
P.C. SIPT 693 psig
M.V. SIPT 1078 psig

0.750" Choke Volume ..... 1,964 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 ..... 2,065 MCF/D

Working Pressure On tubing ..... 157 Psig

Producing Formation ..... Pictured Cliffs

Stimulation Method ..... Sand Water Frac.

Total Depth ..... 4700 - c/o 4430

Field ..... South Blanco

H_2S ..... Sweet to lead acetate.

Final SIPT (MV) - 1078 psig

Louis D. Galloway
L. D. Galloway

cc: D. H. Tucker
~~[illegible]~~
W. T. Hollis
~~[illegible]~~
W. M. Rodgers
Wayne Cheek
Drilling Department
B. D. Adams
Roland Hamblin
Jack Purvis
~~[illegible]~~
C. C. Kennedy
E. J. Coel, Jr. (6)
A. J. Dudenhoeffer
File

Bill Parrish
Dean Rittmann

EL PASO NATURAL GAS COMPANY

OPEN FLOW TEST DATA

DUAL COMPLETION

DATE September 13, 1957

Operator: El Paso Natural Gas Company		Lease: Bolack No. 9-C	
Location: 1650'N, 990'E, Sec. 31-27-8		County: San Juan	State: New Mexico
Formation: Pictured Cliffs		Pool: South Blanco	
Casing: Diameter: 7-5/8	Set At: Feet: 4235	Tubing: Diameter: 1-1/4	Set At: Feet: 2070
Pay Zone: From: 2018	To: 2070	Total Depth: 4700 - c/o 4430	
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 - 4182 to 4698	
Shut-In Pressure, Casing, PSIG: PC 693	+ 12 = PSIA: 705	Days Shut-In: 16	Shut-In Pressure, Tubing PSIG: PC - 693
Flowing Pressure: P PSIG: 152	+ 12 = PSIA: 164		Working Pressure: P_w PSIG: 157
Temperature: T F: 70	n: 0.85		Fpv (From Tables): 1.014
			Gravity: .649

SIPT (MV) Initial - 1078; Final - 1078 psig. Packer at 4220. Sleeve at 2091. 2" at 4373

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

Q = 12.365 x 164 x .9905 x .9645 x 1.014 = 1964 MCF D

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

Aof $\left(\frac{497,025}{468,464} \right)^n$ $1.061^{.85}$ x 1964 = 1.0516 x 1964

Aof 2065 MCF D

RECEIVED
OIL CON. COM.
DIST. 3

TESTED S. V. Roberts

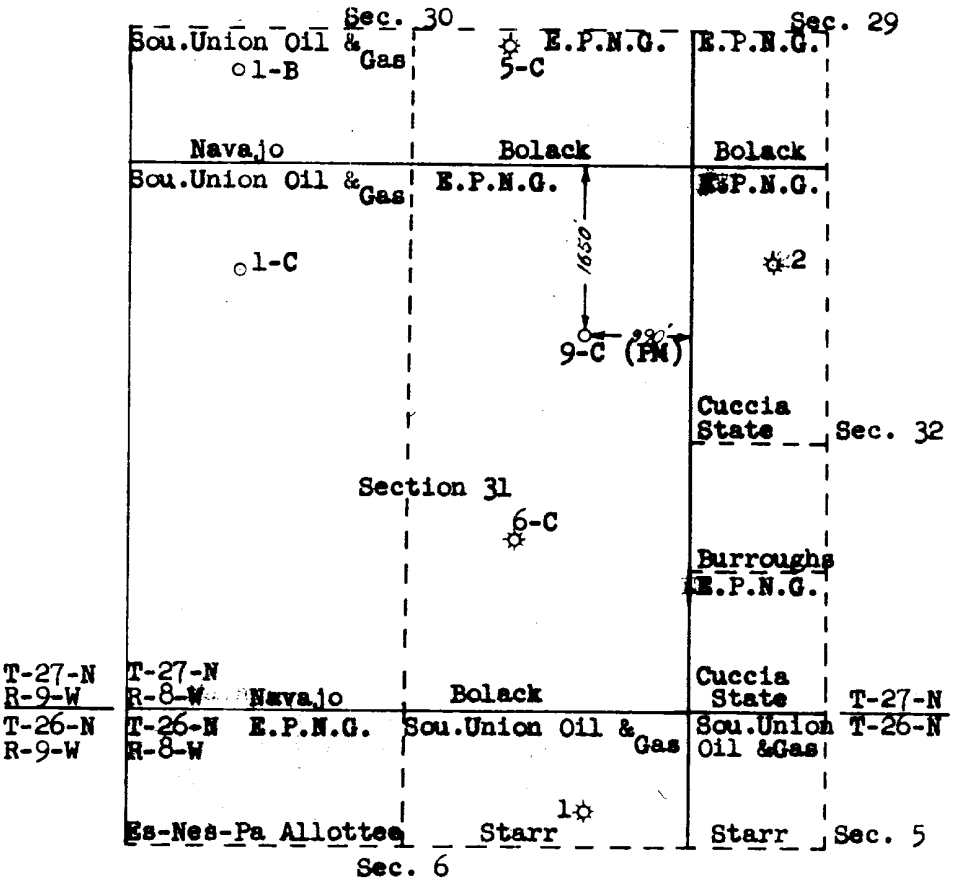
WITNESSED

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

L. D. Galloway

L. D. Galloway

PLAT SHOWING LOCATION OF DUALLY COMPLETED EL PASO NATURAL GAS BOLACK NO. 9-C (PM) AND OFFSET ACREAGE



EL PASO NATURAL GAS COMPANY EL PASO, TEXAS		
SCALE	DATE	No.
DRAWN BY	CHECKED BY	

FORM 7-132 (10-56)