

EL PASO NATURAL GAS COMPANY

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

August 23, 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, Warren No. 2, SW 12-28-9,  
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 2354 feet, and a Garrett Sleeve at 2259 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours August 14, 1957 with the following data obtained:

Pictured Cliffs SIPC 855 psig; shut-in 10 days  
Mesa Verde SIPT 1017 psig

<u>Time</u>	<u>Flowing Pressure</u>	<u>Pictured Cliff SIPC</u>	<u>Temp °F</u>
0	1017	855	
15 min.	452	855	66
30 min.	415	856	71
45 min.	397	856	74
1 hour	376	857	74
3 hours	313	857	80

The choke volume for the Mesa Verde test was 3906 MCF/D with an A.O.F. of 5347 MCF/D. The well was shut-in for 7 days and the Pictured Cliff zone was tested August 21, 1957 through a 3/4" choke for three hours with the following data obtained:

Mesa Verde SIPT 1028 psig; shut-in 7 days  
Pictured Cliffs SIPC 876 psig  
Pictured Cliffs SIPT 876 psig



<u>Time</u>	<u>Flowing Pressure</u>	<u>Mesa Verde SIPT</u>	<u>Temp °F</u>
0	876	1028	
15 min	588	1029	
30 min.	487	1029	
45 min	410	1029	
1 hour	363	1029	
3 hours	220	1030	66

The choke volume for the Pictured Cliff test was 2820 MCF/D with an A.O.F. of 3002 MCF/D. The results of the above tests indicate there is no packer leakage.

Very truly yours,

Tom Grant  
Tom Grant  
Gas Engineer

TBG/jla

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

EL PASO NATURAL GAS COMPANY  
OPEN FLOW TEST DATADUAL COMPLETIONDATE August 21, 1957

Operator <b>El Paso Natural Gas</b>		Lease <b>Warren No. 2</b>	
Location <b>1460'S, 1750'W, Sec. 12-28-9</b>		County <b>San Juan</b>	State <b>New Mexico</b>
Formation <b>Pictured Cliffs</b>		Pool <b>Wildcat</b>	
Casing: Diameter <b>5-1/2</b>	Set At: Feet <b>2396</b>	Tubing: Diameter <b>1-1/4</b>	Set At: Feet <b>2190</b>
Pay Zone: From <b>2162</b>	To <b>2222</b>	Total Depth: <b>Packer at 2354</b>	
Stimulation Method <b>Sand Water Frac.</b>		Flow Through Casing <b>X</b>	Flow Through Tubing

Choke Size, Inches <b>0.750</b>	Choke Constant: C <b>12.365</b>			
Shut-In Pressure, Casing, PSIG <b>876</b>	- 12 = PSIA <b>888</b>	Days Shut-In <b>7</b>	Shut-In Pressure, Tubing, PSIG <b>876</b>	- 12 = PSIA <b>888</b>
Flowing Pressure: P, PSIG <b>220</b>	- 12 = PSIA <b>232</b>		Working Pressure: P <sub>w</sub> , PSIG <b>225</b>	- 12 = PSIA <b>237</b>
Temperature: T, °F <b>66</b>	n = <b>.850</b>		F <sub>pv</sub> (From Tables) <b>1.021</b>	Gravity <b>.640</b>

Final SIPT (MV) - 1030 psig

CHOKE VOLUME  $Q = C \times P_c \times F_c \times F_g \times F_{pv}$ 

$$Q = 12.365 \times 232 \times .9943 \times .9682 \times 1.021 = 2820 \text{ MCF/D}$$


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

$$Aof = \left( \frac{788,544}{732,375} \right)^n = 1.0766^{.85} \times 2820 = 1.0647 \times 2820$$

Aof 3,002 MCF/DTESTED BY T. B. Grant

WITNESSED BY \_\_\_\_\_

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


  
L. D. Galloway

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