

El Paso Natural Gas Company

El Paso, Texas

June 10, 1958

ADDRESS REPLY TO
POST OFFICE 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 actually completed in the Blanco Mesa Verde Pool and in the South Blanco Pictured Cliffs Pool. The El Paso Natural Gas Company Bolack No. 11-C (PM) is located 1800 feet from the South line and 1550 feet from the West line of Section 28, Township 27 North, Range 8 West, N.M.P.M., San Juan County, New Mexico.

This well has been completed in the Point Lookout section 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 4396 feet and cemented with a two stage cementing procedure; 100 sacks at the base of the casing and 150 sacks across the Pictured Cliffs formation.
3. 5 1/2" liner set from 4301 feet to 4697 feet with 150 sacks of cement.
4. The casing and liner were tested for leaks before perforating.
5. The Point Lookout section was perforated in seven intervals and fractured with water and sand.
6. The Pictured Cliffs formation was perforated in one interval and fractured with water and sand.
7. All perforations were cleaned out after treatment and completion was accomplished by setting a Baker Model "EGJ" production packer on 2" EUE tubing at 4343 feet with tubing perforations set opposite the Point Lookout perforations. 1 1/4" EUE tubing siphon string was run with tubing perforations set opposite the Pictured Cliffs perforations. The Point Lookout gas will be produced through the 2" tubing and the Pictured Cliffs gas through the casing.
8. 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.

COPY

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 operators to this well have been notified of El Paso Natural Gas Company's intentions to dually complete this well and in turn have waived any objections to this plan. I am sending copies of the letters of approval received from the offset operators. 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 plats showing the location of the well and offset operators.

It is intended to dedicate the W/2 of Section 28, Township 27 North, Range 8 West to the Mesa Verde formation and the SW/4 of Section 28, Township 27 North, Range 8 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,

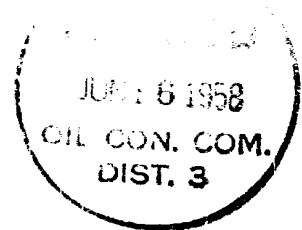
ORIGINAL SIGNED E. S. OBERLY

E. S. Oberly,
Division Petroleum Engineer

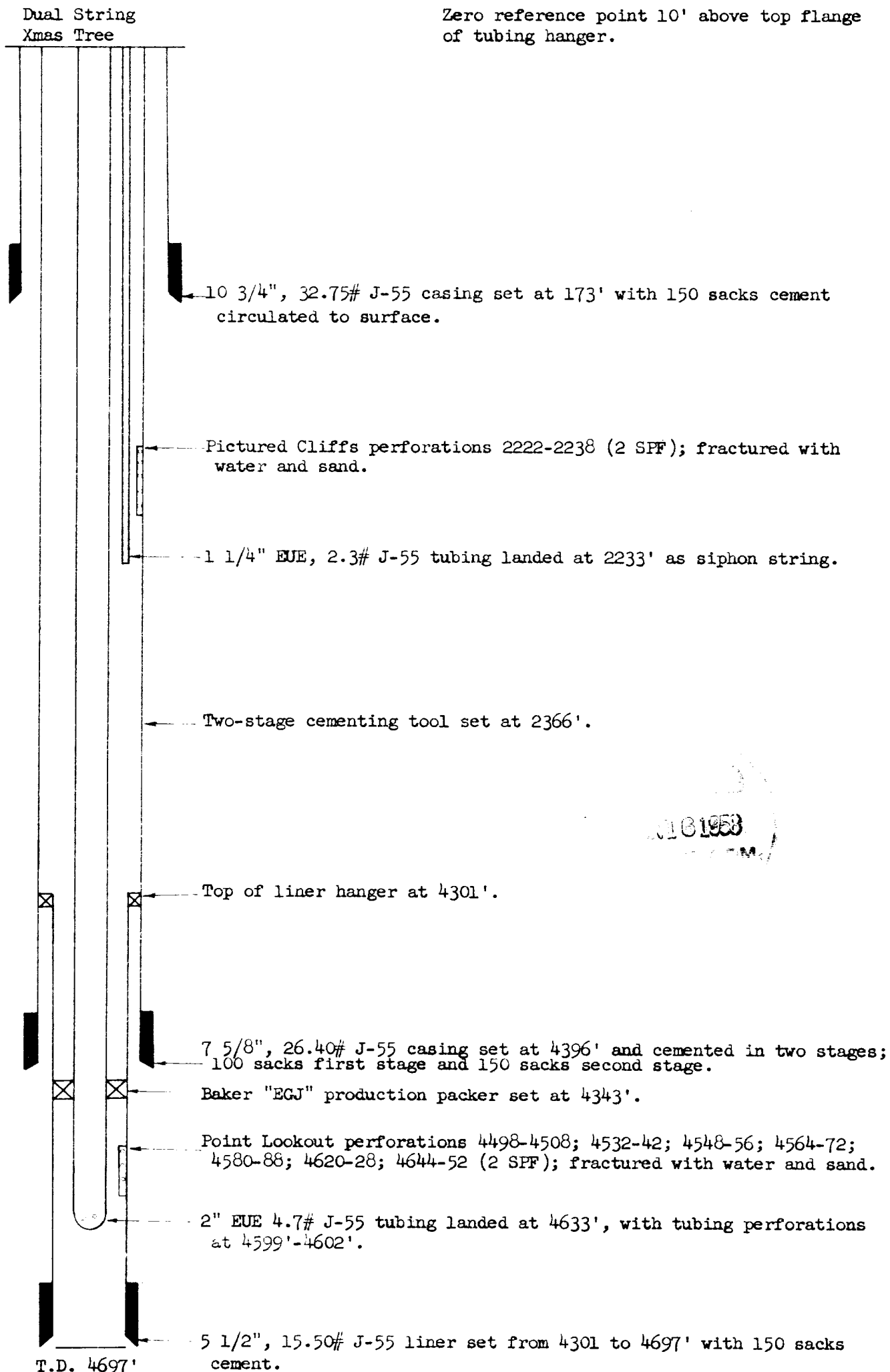
ESO:dgb

Encl.

cc: NMOCC (Emery Arnold) ✓
Sam Smith
USGS (Phil McGrath)



SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. Bolack No. 11-C (FM)
SW/4 Section 28, T-27-N, R-8-W



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 February 22, 1960, I was called to the location of the El Paso Natural Gas Company Bolack No. 11-3 (1M) Well located in the NE3SW/4 of Section 20, Township 27 North, Range 6 West, R.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 4343 feet in accordance with the usual practices and customs of the industry.

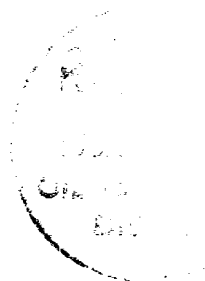
Mack M. Mahaffey

Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 4th day of June, 1960.

Paul D. Macchia

Notary Public in and for San Juan
County, New Mexico

My commission expires February 24, 1961.



EL PASO NATURAL GAS COMPANY

P. O. Box 997
Farmington, New Mexico

April 2, 1958

Mr. E. C. Arnold
Oil Conservation Commission
1000 Rio Brazos Road
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso Natural Gas
Company Well, Bolack No. 11-C (PM), 1800S,
1550W; 28-27-8, 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 4343 feet. The Pictured Cliffs zone was tested through a 3/4" choke for three hours March 10, 1958, with the following data obtained:

	PC SIPC 808 psig; shut-in 15 days			
	MV SIPT 1067 psig; shut-in 15 days			
<u>Time</u> <u>Minutes</u>	<u>PC Flowing Pressure</u> <u>Casing Psig</u>	<u>MV SIPT Psig</u>	<u>PC Working</u> <u>Pressure, Psig</u>	<u>Temp ° F</u>
0	-	1067		-
15	217	1065		53
30	148	1067		54
45	88	1070		56
60	78	1071		57
180	55	1075	Tbg. 58	57

The choke volume for the Pictured Cliffs was 810 MCF/D with an AOF of 815 MCF/D.

The Mesa Verde zone was tested March 28, 1958, with a 3/4" choke for 3 hours with the following data obtained:

PC SIPC 827 psig; shut-in 18 days
MV SIPT 1109 psig; shut-in 33 days



<u>Time Minutes</u>	<u>MV Flowing Pressure Tubing Psig</u>	<u>PC SIPC Psig</u>	<u>MV Working Pressure, Psig</u>	<u>Temp ° F</u>
0	-	827		-
15	262	831		60
30	253	831		62
45	240	831		62
60	211	831		63
180	170	832	Calc. 329	64

The choke volume for the Mesa Verde test was 2112 MCF/D with an AOF of 2271 MCF/D.

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

S. V. Roberts
S. V. Roberts

SVR/nb

cc: W. M. Rodgers
E. S. Oberly (6)
File



EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE March 28, 1958

Operator El Paso Natural Gas Company		Lease Bolack No. 11-C (M)	
Location 1800S, 1550W; 28-27-8		County San Juan	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing: Diameter 7-5/8"	Set At: Feet 4386	Tubing: Diameter 2"	Set At: Feet 4623
Pay Zone: From 4498	To 4652	Total Depth: 4697 c/o 4672	Shut-in 2-23-58
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 4301-4696	
Shut-in Pressure, Casing, PSIG (PC) 827	PSIA 839	Days Shut-In 33	Shut-in Pressure, Tubing, PSIG (MV) 1109	PSIA 1121	
Flowing Pressure: P 170	PSIG 182		Working Pressure: P _w (Calc.) 341	PSIG 341	
Temperature: T 64	F 0.75		F _{ov} (From Tables) 1.021	Gravity 0.709	

Initial SIPC (PC) 827

1-1/4" at 2223

Pkr. at 4343

Final SIPC (PC) 832

CHOKE VOLUME - $Q = C \times P_1 \times F_1 \times F_g \times F_p$

$$Q = (12.365) (182) (.9962) (.9225) (1.021) = 2,112 \text{ MCF/D}$$

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

$$Aof = \left(\frac{1,256,641}{1,140,360} \right)^n = (1.1019)^{.75} (2112) = (1.0755) (2112)$$

$$Aof = 2,271 \text{ MCF/D}$$

TESTED BY S. V. RobertsWITNESSED BY Bill Rischard

Lewis D. Galloway
L. D. Galloway

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE March 10, 1958

Operator El Paso Natural Gas Company		Lease Bolack No. 11-C (P)	
Location 1800S, 1550W; 28-27-8		County San Juan	State New Mexico
Formation Pictured Cliffs		Pool South Blanco	
Casing Diameter 7-5/8"	Set At Feet 4386	Tubing Diameter 1-1/4"	Set At Feet 2223
Flow Zone From 2222	To 2238	Total Depth 4697 c/o 4672	Shut-In 2/23/58
Stimulation Method Sand Water Frac.		Flow Through Casing X	Flow Through Tubing

Choke Size, inches .750	Choke Constant, C 12.365	5-1/2 liner 4301-4696
Shut-In Pressure, P _{si} 808	Days Shut-In 15	Shut-In Pressure, Tubing P _{si} 808
Flowing Pressure, P _{si} 55	Flowing Pressure, P _{si} 67	Working Pressure, P _w P _{si} 58
Temperature, T 57	Temperature, T .85	Gravimetric 1.007 (RR Comm)
		Gravity .640

Initial SIPT (MV) 1067 PSIG
Final SIPT (MV) 1075 PSIG

Pkr at 4343

CHOKE VOLUME $Q = C \times P_r \times F_r \times F_g \times F_{av}$

$Q = (12.365) (67) (1.0029) (.9682) (1.007) = 810$ MCF/D

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

$Q = \left(\frac{672400 - 667500}{672400 - 667500} \right)^n$

$(1.0073)^{.85} (810) = (1.0062) (810)$

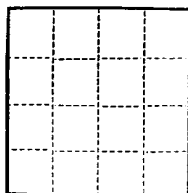
Actual 815 MCF/D

By S. V. Roberts

Witnessed by

Checked By: H. L. Kendrick

Lewis D. Galloway
L. D. Galloway



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Santa Fe
Lease No. 279232
Unit Polack

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	<input checked="" type="checkbox"/>
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

February 11, 1958

Well No. 11-C is located 1800 ft. from S line and 1550 ft. from E line of sec. 28

SW/4-28 (1/4 Sec. and Sec. No.) 27N (Twp.) 8W (Range) N.M.P.M. (Meridian)
Blanco & South Blanco P.O. (Field) San Juan (County or Subdivision) New Mexico (State or Territory)

The elevation of the derrick floor above sea level is 6205 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

On Feb. 10, 1958, Total Depth 4377'.
Ran 106 joints 7 5/8", J-55, 26.4#, Casing (4404.85) set at 4396', with 150 sacks regular cement, 100 sacks Pozmix, 25# Flocele and 4% Gel, followed with 50 sacks Neat cement. 2nd stage 150 sacks Pozmix with 4% Gel.
Held 1000#/30 minutes.
Top of cement by temperature survey at 1450'.



I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced

Company El Paso Natural Gas Company

Address Box 997

Farmington, New Mexico

By Original Signed D. C. Johnston

Title Petroleum Engineer