

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-63

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 10-19-81		DEC 18 1981	
Company Yates Petroleum Corporation ✓				Connection Transwestern Pipeline Co.			
Pool Undesignated Wolfcamp				Formation Wolfcamp		Unit	
Completion Date 8-22-81		Total Depth 9060 KB		Plug Back To 6636 KB		Elevation 3696 KB	
Casing Size 4 1/2"		WT. 11.6#		d 4.000		Set At	
Tubing Size 2 3/8"		WT. 4.7#		d 1.995		Set At 6419 KB	
Perforations: From 6476 To 6578 KB				Perforations: From To			
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single				Packer Set At 6419 KB		Form or Lease Name Emma "OE" Com	
Producing Thru Tubing		Reservoir Temp. °F 123 @ 6527 KB		Mean Annual Temp. °F 62		Baro. Press. - P _a 13.2	
L 6518		H 6518		G _g 0.707		% CO ₂ 0.07	
				% N ₂ 1.44		% H ₂ S Nil	
				Prover -----		Meter Run 2"	
						Tape Flanged	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
1.	2.067	X	1.000	692	4	71	1721	72			Days
2.	2.067	X	1.000	698	6.5	70	1302	78			16 hrs.
3.	2.067	X	1.000	683	9.5	67	1133	80			24 hrs.
4.	2.067	X	1.000	690	13	73	915	81			24 hrs.
5.							795	82			24 hrs.

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	4.946	53.11	705.2	0.9896	1.241	1.0667	344
2	4.946	67.99	711.2	0.9905	1.241	1.0676	441
3	4.946	81.33	696.2	0.9840	1.241	1.0681	525
4	4.946	95.61	703.2	0.9877	1.241	1.0654	618
5							

NO.	P _i	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	1.051	531	1.431	.8788	52.00	51.8	0.649	XXXXXX	671	371
2	1.060	530	1.429	.8773						
3	1.038	527	1.420	.8766						
4	1.048	533	1.437	.8810						
5										

P _i 2113.2 P _c 4598				
NO.	P _i ²	P _w	R _w ²	P _c ² - R _w ²
1			2569	2029
2			1940	2658
3			1255	3343
4			947	3651
5				

$$(1) \frac{P_c^2}{P_c^2 - R_w^2} = 1.7299$$

$$AOF = Q \left[\frac{R_w^2}{P_c^2 - R_w^2} \right]^n = 759$$

$$(2) \left[\frac{R_w^2}{P_c^2 - R_w^2} \right]^n = 1.7216$$

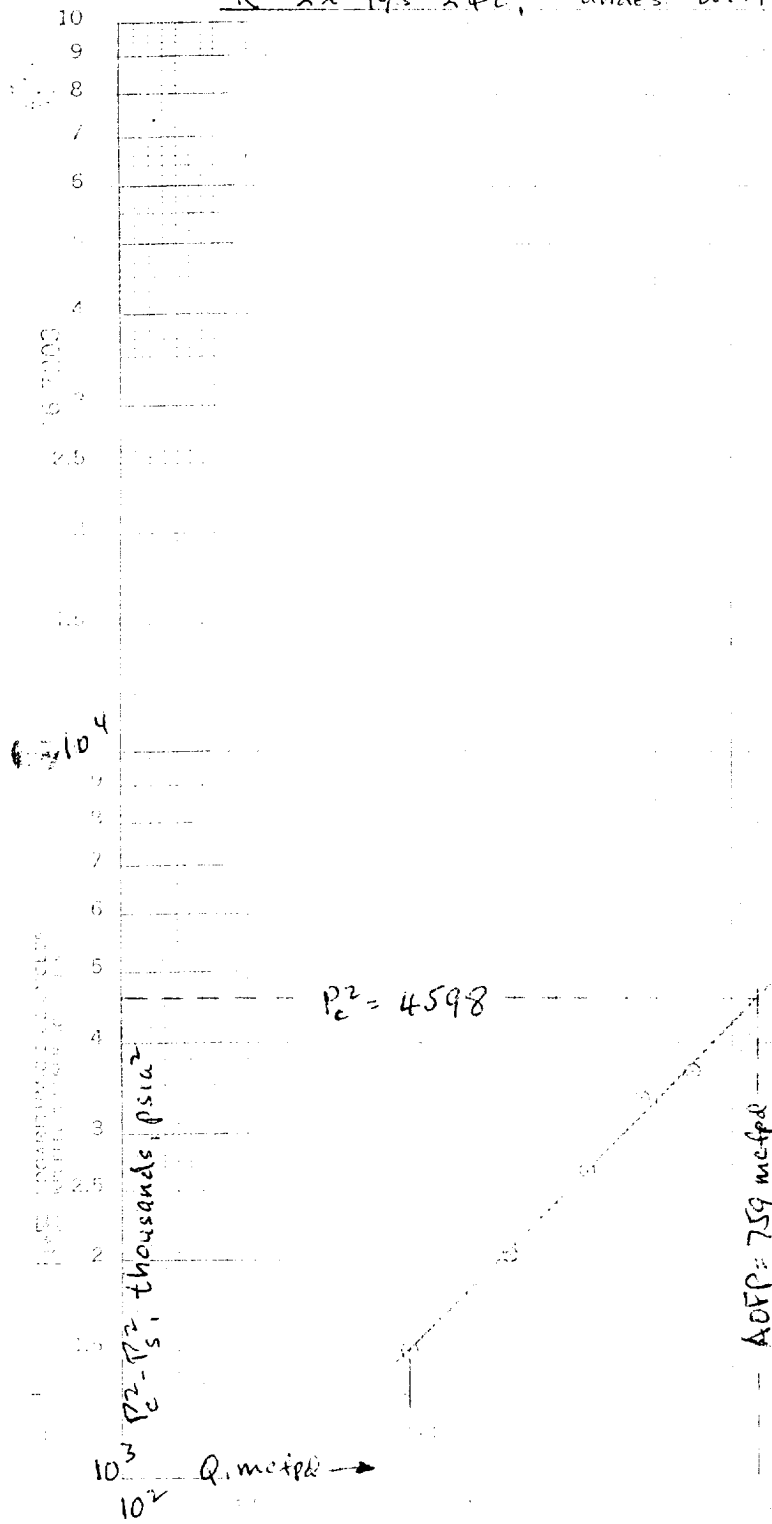
Absolute Open Flow	759	Mcf/d @ 15.025	Angle of Slope	45.175 deg.	Slope, n	0.9913
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Remarks: Static pressures by Bennett Wireline, flowing pressures by DWT. Calculations worksheet C122D attached.

Approved By Commission:	Conducted By: Danny Matthews	Calculated By: Eddie Mahfood	Checked By:
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YPC - Emma QE Com No 1

K-22-19s-24E, Unders. Wolfcamp, Eddy Co., N.M.



$$Q_1 = 2450 \text{ mcfpd}$$

$$\log Q_1 = 3.3892$$

$$Q_2 = 250 \text{ mcfpd}$$

$$\log Q_2 = 2.3979$$

$$n = 0.9913$$



WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY 1/10 LEASE Summit 66 WELL NO. 1 DATE 10-19-61

LOCATION: Unit K Section 22 Township 10S Range 24E

L 6510 H 6510 L/H 1.00 G 0.767 % CO₂ 0.07 % N₂ 1.44 % H₂S Nil
d 2.00418 F_r 0.05716 GH 4600 P_{cr} 670 T_{cr} 391
E_h (4160) 27186

TABLE IX & X

LINE	Σ 1	2	3	4				
1 Q _m		0.3414	0.525	0.613				
2 F _g (W.H. OR)	532	532	541	542				
3 F _s (B.H. OR)	523	522	526	529				
4 F _r = $\frac{(P_w + P_s)^2}{2}$	557.5	560	560.5	560.5				
5 F _g (B.H. OR)	7303	7381	7355	7353				
6 F _r	407.142	437.920	445.878	446.101				
7 GH/TZ	11.3179	10.5225	10.3347	10.3380				
8 e ^s (Table XIV)	1.5237	1.4252	1.4734	1.4734				
9 1-e ^s (Table XIV)		0.3460	0.3223	0.3033				
10 P _r	17342	131512	114612	80322				
11 P _r 2/1000	366745	172478	131377	86186				
12 F _r (Table X) $\frac{P_r}{1000}$	1.01244120	39459	0.32155	0.36143				
13 F _c = F _r TZ		62824	72074	75139				
14 F _c Q _m		2.3128	3.0963	4.6436				
15 L/H (F _c Q _m) ²		5.605	9.550	21.563				
16 F _w = L/H (F _c Q _m) ² (1-e ^{-s})		1.23	3.07	6.34				
17 P _w = P _r ² + F _w		173158	131634	86613	25973			
18 P _s ² = e ^s P _w ²	4597.5	2564.3	1940.2	1265.4	947.0			
19 P _s	2144.2	1602.9	1392.9	1126.5	973.1			
20 P = $\frac{P_r + P_s}{2}$	1939.2	1459.1	1269.6	1024.3	846.7			
21 P _r = (P/P _{cr})	2.894	2.172	1.895	1.529	1.329			
22 T _r = (T/T _{cr})	1.426	1.432	1.433	1.433	1.433			
Σ	57363	51779	47458	41733				

$\frac{0.97}{0.98} = \frac{97}{98}$

7129