

NORTH MEXICO OIL CONSERVATION COM. ON
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 3-26-81		MAY 15 1981		
Company Yates Petroleum Corporation ✓			Connection TWP			
Pool Penasco Draw Morrow			Formation Morrow			
Completion Date 12-22-80		Total Depth 9250		Plug Back TD 9182 KB		
Casing Size 4 1/2#		Well 11.6#		Set At 4.000" 9250 KB		
Tubing Size 2 3/8"		Well 4.7#		Set At 1.995" 8686 KB		
Type Well - Single - Dradthead - G.C. or G.O. Multiple single			Packer Set At 8686 KB		Form or Lease Name Penasco IW State Com	
Producing Thru Tubing		Reservoir Temp. °F 144 # 8740		Mean Annual Temp. °F 62		
Baro. Press. - P _a 13.2		State New Mexico		County Eddy		
L 8733		H 8733		C _g 612		
% CO ₂ 2.78		% N ₂ 0.38		% H ₂ S Nil		
Prover ---		Meter Run 2"		Taps Flanged		

FLOW DATA									
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	TUBING DATA		CASING DATA
							Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.
1.	2.067	X	0.875	595	5	55	2360	62	
2.	2.067	X	0.875	505	9	60	2206	71	
3.	2.067	X	0.875	405	16	55	1932	73	
4.	2.067	X	0.875	400	27	60	1578	74	
5.							425	75	

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	3.729	55.15	608.2	1.005	1.279	1.055	279
2	3.729	68.29	518.2	1.000	1.279	1.045	340
3	3.729	81.80	418.2	1.005	1.279	1.038	407
4	3.729	105.62	413.2	1.000	1.279	1.036	522
5							

NO.	R ₁	Temp. °R	T ₁	Z
1	0.892	515	1.443	.8981
2	0.760	520	1.457	.9163
3	0.613	515	1.443	.9286
4	0.606	520	1.457	.9321
5				

P _c 3256.2 P _c ² 10603		Gas Liquid Hydrocarbon Ratio _____ Mct/bbl.	
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.		Specific Gravity Separator Gas 0.611	
Specific Gravity Flowing Fluid _____		Critical Pressure 682	
Critical Temperature 357		P.S.I.A. 753	
		R 382.5	

NO.	P ₁ ²	P _w ²	R ₁ ²	P _c ² - R ₁ ²
1			7841	2762
2			5989	4614
3			3956	6646
4			290	10313
5				

(1) $\frac{P_c^2}{R_1^2 - R_w^2} = 1.0281$

AOF = Q $\left[\frac{R_1^2}{P_c^2 - R_w^2} \right]^n = 530$

(2) $\left[\frac{R_1^2}{R_1^2 - R_w^2} \right]^n = 1.016$

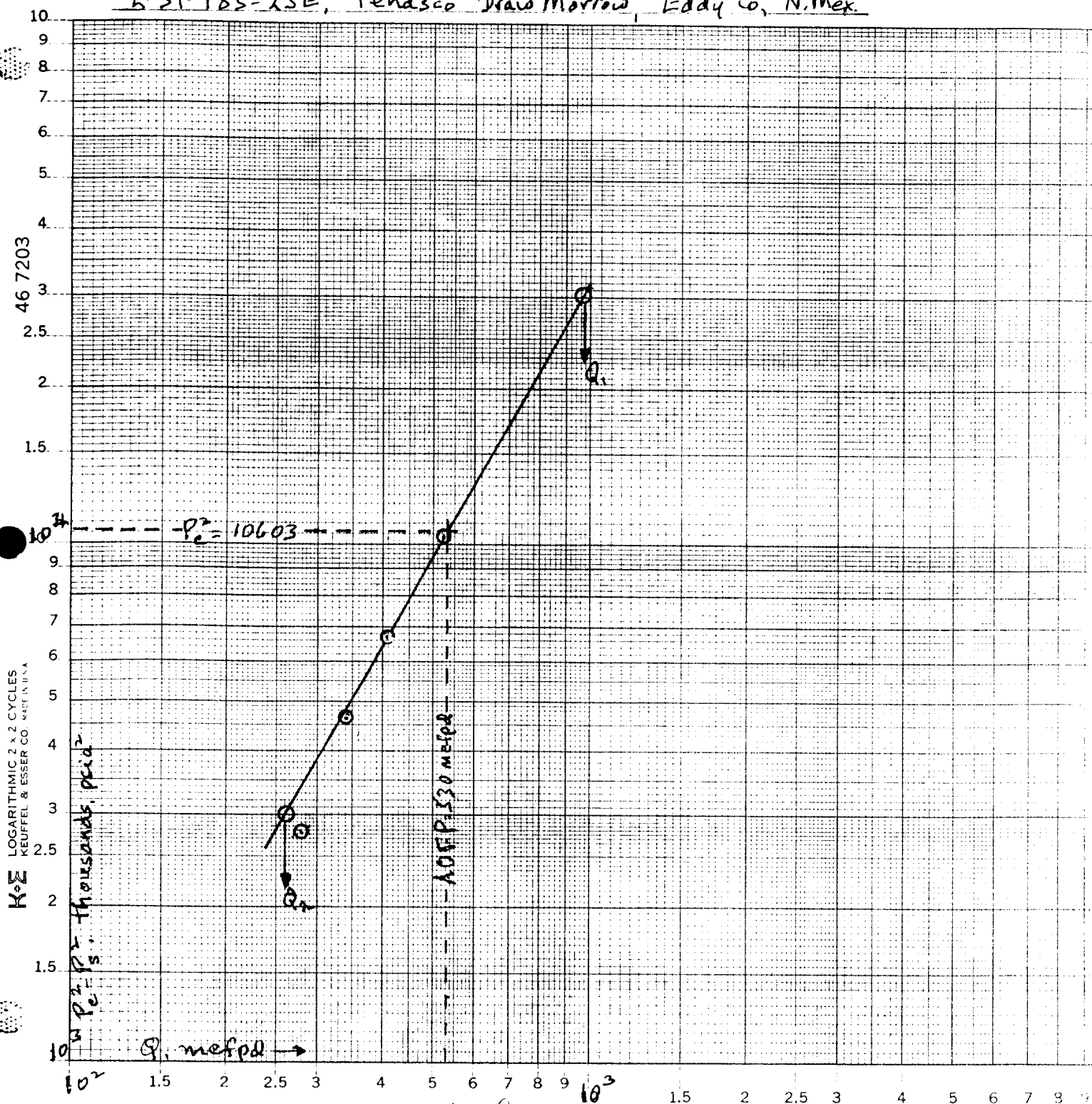
Absolute Open Flow 530	Mcf/d @ 15.025	Angle of Slope @ 60.28 deg.	Slope, n 0.5709
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Remarks: Pressures by dead weight tester. Calculations worksheet C122D attached.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
		Eddie Mahfood	

YPC - Penasco 1W State Com No. 7

6-31-18S-25E, Penasco Draw Morrow, Eddy Co., N. Mex.



$$Q_1 = 968 \text{ mcfpd} \quad \log Q_1 = 2.9859$$

$$Q_2 = 260 \text{ mcfpd} \quad \log Q_2 = 2.4150$$

$$n = 0.5709$$

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY YPC LEASE Penanco 1W State Com WELL NO. 7 DATE 3-26-81

LOCATION: Unit L Section 31 Township 18S Range 2SE

L 8733 H 8733 L/H 10000 G 0.612 % CO₂ 2.72 % N₂ 0.37 % H₂S NIL
 $2\frac{3}{8}$ 2082(548) = 34554
 $4\frac{1}{2}$ 51(160) = 316
8733(4050) = 35370

d 2.0125 F_r 0.01636 GH 5344.6 P_{cr} 253 T_{cr} 382.5

LINE	S1	1	2	3	4				
1 Q _m	-	0.279	0.340	0.407	0.522				
2 T _w (W.H. °R)	522	531	533	534	535				
3 T _s (B.H. °R)	604	603	603	602	602				
4 T = $\frac{(T_w + T_s)}{2}$	563	567	568	568	568.5				
5 Z (Est.)	.756	.7605	.7695	.793	.9325				
6 TZ	425.63	431.203	437.076	450.424	530.126				
7 GH/TZ	12.557	12.395	12.228	1.5913	1.4595				
8 e ^s (Table XIV)	1.60(1)	1.5917	1.5813	1.5634	1.4595				
9 1-e ^s (Table XIV)		0.3717	0.3678	.3592	.3148				
10 P _t	25732	2219.2	1945.2	1591.2	435.2				
11 P _t ² /1000	6621.35	4924.85	3793.3	2531.9	192.0				
12 F _r (Table XIV)	0.46480	0.45855	0.45855	0.44446	0.37807				
13 F _c = F _r TZ	7.0229	7.1243	7.1243	7.3419	8.641				
14 F _c Q _m	1.961	2.422	2.422	2.988	4.511				
15 L/H (F _c Q _m) ²	3.845	5.867	5.867	8.924	20.346				
16 F _w = L/H (F _c Q _m) ² (1-e ^{-s})	1.43	2.2	2.2	3.2	6.4				
17 P _w ² = P _t ² + F _w	4926.23	3086.0	3086.0	2535.1	192.4				
18 P _s ² = e ^s P _w ²	10603.4	7841.2	5980.7	3455.8	289.6				
19 P _s	3256.2	2800.2	2447.2	1988.9	538.1				
20 P = $\frac{P_t + P_s}{2}$	2914.7	2509.7	2196.2	1790.0	438.2				
21 P _r = (P/P _{cr})	3.871	3.333	2.917	2.377	0.648				
22 T _r = (T/T _{cr})	1.402	1.432	1.432	1.495	1.036				
23 Z (Table XI)	0.756	0.7605	0.7645	0.763	0.725				