

MEXICO OIL CONSERVATION COMM ON
MULTIPOINT AND ONE POINT BACK PRESSURE TES. FOR GAS WELL

copy to
C-122 file
Form C-122
Revised 9-4-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 12-7-78		FEB 9 1979	
Company Yates Petroleum Corp. ✓					Connection Transwestern Pipeline Company		O.C.C.	
Pool E. Eagle Creek Atoka Morrow					Formation Morrow		Unit ARTESIA, OFFSHORE	
Completion Date 11-15-77		Total Depth 9500'		Plug Back TD 8840' KB		Elevation 3476' GR		Farm or Lease Name Mitchell "IN"
Csg. Size 5-1/2"	Wt. 15.5-17#	d 4.892	Set At 9461'	Perforations: From 8018 To 8024		Well No. 2		
Tbg. Size 2-7/8" PC	Wt. 6.5#	d 4.892	Set At 8840	Perforations: From To		Unit T	Sec. 23	Twp. 17S
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Multiple - gas & SW disposal					Packer Set At 8840		County Eddy	
Producing Thru Annulus		Reservoir Temp. °F 134 @ 8021		Mean Annual Temp. °F 62		Baro. Press. - P _a 13.2		State New Mexico
L 8014	H 8014	G _g .634	% CO ₂ 0.35	% N ₂	% H ₂ S	Prover	Meter Run 4"	Taps Flange

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
SI							2259	34			months
1.	4.026 x 1.125			170	5	35	2144	65			1 hour
2.				170	13	41	2095	67			1 hour
3.				171	32	45	2022	70			1 hour
4.				172	69	48	1865	74			1 hour
5.											

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	6.031	30.27	183.2	1.025	1.262	1.020	241
2	6.031	48.80	183.2	1.019	1.262	1.019	386
3	6.031	76.77	184.2	1.015	1.262	1.019	604
4	6.031	113.04	185.2	1.012	1.262	1.018	886
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ 430 Mcf/bbl.
1.	0.273	495	1.352	.9610	A.P.I. Gravity of Liquid Hydrocarbons _____ 55.6 Deg.
2.	0.273	501	1.369	.9625	Specific Gravity Separator Gas _____ .628 XXXXXXXXXX
3.	0.274	505	1.380	.9635	Specific Gravity Flowing Fluid _____ XXXXX .634
4.	0.275	508	1.388	.9640	Critical Pressure _____ 672 P.S.I.A. 671.5 P.S.I.A.
5.					Critical Temperature _____ 366 °R 368 °R

P _c 2895	P _c ² 8379	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.0021$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.8275$
NO.	P _t ²	P _w	P _w ²
1			7350
2			7011
3			6520
4			5588
5			2791

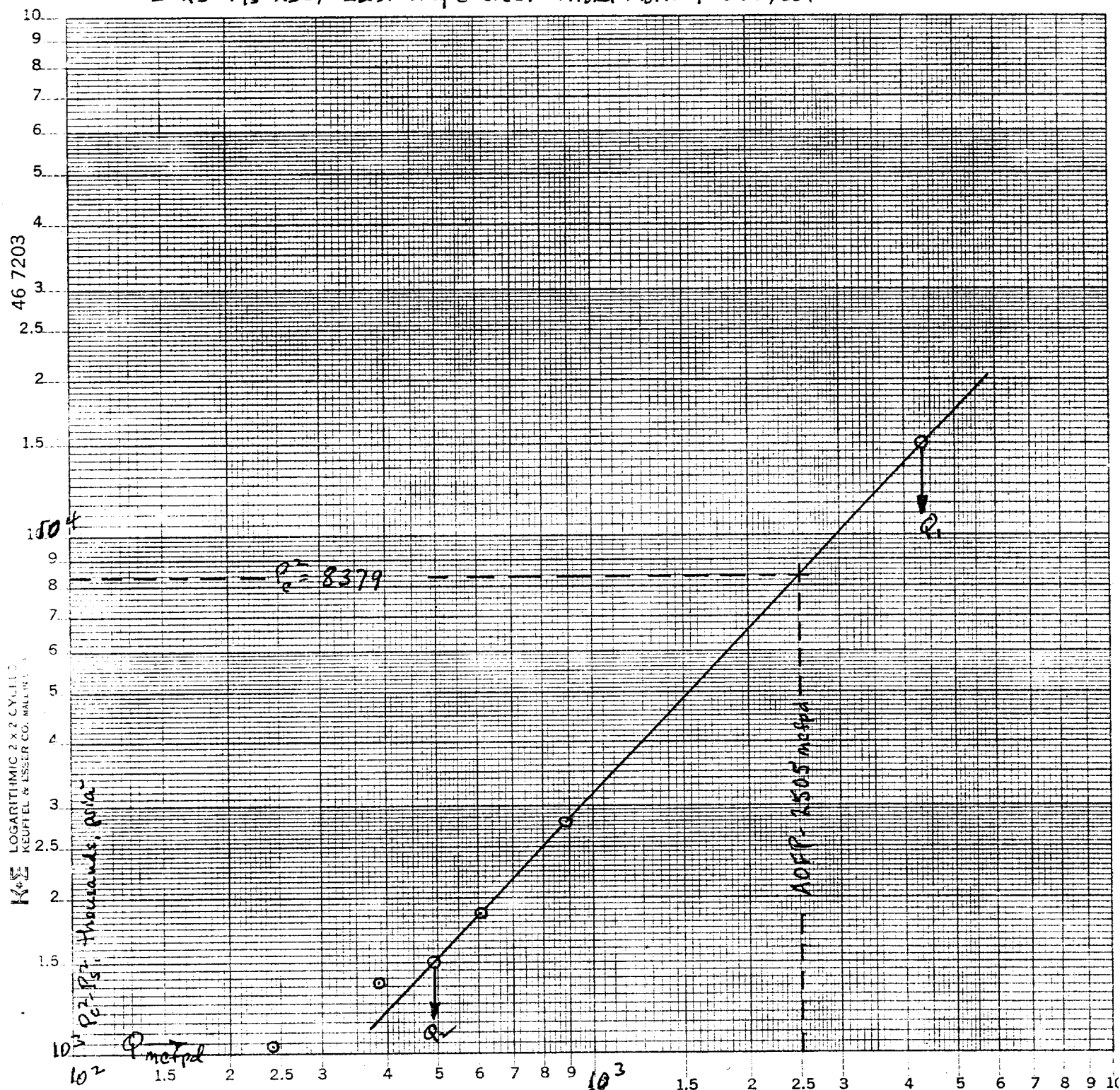
Absolute Open Flow _____ 2505 Mcfd @ 15.025		Angle of Slope @ _____ 48.2 deg	Slope, n _____ .9455
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Remarks: All pressures by Dead weight testers. Well making some frac fluid and may be loading some. Calculations worksheet C-122D attached.

Approved By Commission:	Conducted By: Don Weaver	Calculated By: Eddie Mahfood	Checked By:
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YPC - Mitchell 1N No. 2

I-23-17s-2SE, East Eagle Creek Atoka Morrow, Eddy Co. N.M.



$$Q_1 = 4340 \text{ mcf/d}$$

$$\log Q_1 = 3.6375$$

$$Q_2 = 492 \text{ mcf/d}$$

$$\log Q_2 = 2.6920$$

$$n = 0.9455$$

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY Yates Petroleum Corp LEASE Mitchell IN WELL NO. 2 DATE 12-7-78

LOCATION: Unit I Section 23 Township 17S Range 25E

L 8014 H 8014 L/H 1.000 G 1.653 % CO₂ 0.35 % N₂ 0.41 % H₂S 11.1
~~12-278~~ 14656 (A₂ + 34) ⁵⁹⁴⁰³ 3.998 F_i 0.002908 GH 5233 P_{CT} 671 T_{CT} 374
3358 (A₂ + 34) ⁵⁹⁴⁰³ 8014 (12.25)

LINE	51	1	2	3	4	5	1	2	3	4
1 Q _m	-	0.241	0.386	0.604	0.886		0.241	0.386	0.604	0.886
2 T _w (W.H. °R)	494	525	527	530	534					
3 T _s (B.H. °R)	594	593	593	592	592					
4 T = ($\frac{1}{w} + \frac{1}{s}$)	544	559	560	561	563		559	560	561	563
5 Z (Est.)	1745	1768	1769	1771	1776					
6 TZ	4405.28	429.31	430.64	432.53	436.89					
7 GH/TZ	12.912	12.189	12.152	12.099	11.978					
8 e ^s (Table XIV)	1.62229	1.5795	1.5773	1.5741	1.5670					
9 1-e ^s (Table XIV)		0.3669	0.3660	0.3647	0.3618					
10 P _i	2272.2	2157.2	2108.2	2035.2	1888.2					
11 P _i 2/1000	5162.9	4653.5	4444.5	4142.0	3565.3					
12 F _i (Table XIV) 0.037594	4484.0	4457.10	4455.69	4453.70	4449.17					
13 F _c = F _i TZ		1.2484	1.2523	1.2578	1.2705					
14 F _c Q _m		0.301	0.483	0.760	1.1256					
15 L/H (F _c Q _m) ²		0.1091	0.234	0.577	1.267					
16 F _w = L/H (F _c Q _m) ² (1-e ^s)		0.033	0.1086	0.21	0.46					
17 P _w ² = P _i ² + F _w		4653.5	4444.6	4142.2	3565.76					
18 P _s ² = e ^s P _w ²	8378.9	7350.3	7010.5	6520.3	5587.5					
19 P _s	2894.6	2711.1	2647.7	2553.5	2363.8					
20 P = ($\frac{P_i + P_s}{2}$)	2583.4	2434.2	2378.0	2294.3	2126.0					
21 P _r = (P/P _{CT})	3.850	3.628	3.544	3.419	3.168					
22 T _r = (T/T _{CT})	1.4545	1.4945	1.4973	1.5000	1.5053					
23 Z (Table XI)	0.745	0.768	0.769	0.771	0.776					