

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

Form C-122
Revised 5-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 3-26-81		MAY 21 1981	
Company Yates Petroleum Corporation			Connection Transwestern Pipeline Company		
Pool Hoag Tank Morrow			Formation Morrow		
Completion Date 11-10-80		Total Depth 9260 KB		Elevation 3761 KB	
Casing Size 5 1/2"		Well 17#		Perforations: From 9022 To 9038	
Fig. Size 2 7/8"		Well 6.5#		Perforations: From To	
Type Well - Single - Draddenhead - G.G. or G.O. Multiple single				Packer Set At 9008 KP	
Producing Thru Tubing		Reservoir Temp. °F 147 @ 9030		Mean Annual Temp. °F 62	
L 9024		H 9024		Baro. Press. - P _a 13.2	
C _g 0.5935		% CO ₂ 0.24		% N ₂ 2.17	
C _g 0.5935		% H ₂ S N.7		Prover ---	
Meter Run 2"		Tape 1.000		County Eddy	
State New Mexico		Well No. 1		Unit 0 27 19s 24e	

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							2835	63			Days
1.	2.067	X	1.000	565	10	45	2586	76			18 hrs.
2.	2.067	X	1.000	540	18	75	2502	79			24 hrs.
3.	2.067	X	1.000	390	35	45	2128	81			24 hrs.
4.	2.067	X	1.000	330	67	60	1843	82			24 hrs.
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. Factor, F _{sp}	Rate of Flow Q, Mcfd
1	4.946	76.04	578.2	1.015	1.299	1.052	522
2	4.946	99.79	553.2	0.9859	1.299	1.040	657
3	4.946	118.79	403.2	1.015	1.299	1.036	803
4	4.946	151.64	343.2	1.000	1.299	1.028	1002
5							

NO.	P _t	Temp. °F	T _t	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature	P.S.I.A.	P.S.I.A.
1	0.850	505	1.443	.9033			0.593	XXXXXX	680.5	350	730	368
2	0.813	535	1.529	.9239								
3	0.593	505	1.443	.9312								
4	0.504	520	1.486	.9466								
5												

P_c 3533.2 P_c² 12483

NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²
1			10368	2115
2			9705	2778
3			7035	5448
4			5269	7214
5				

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = \frac{1.7304}{1.3439}$$

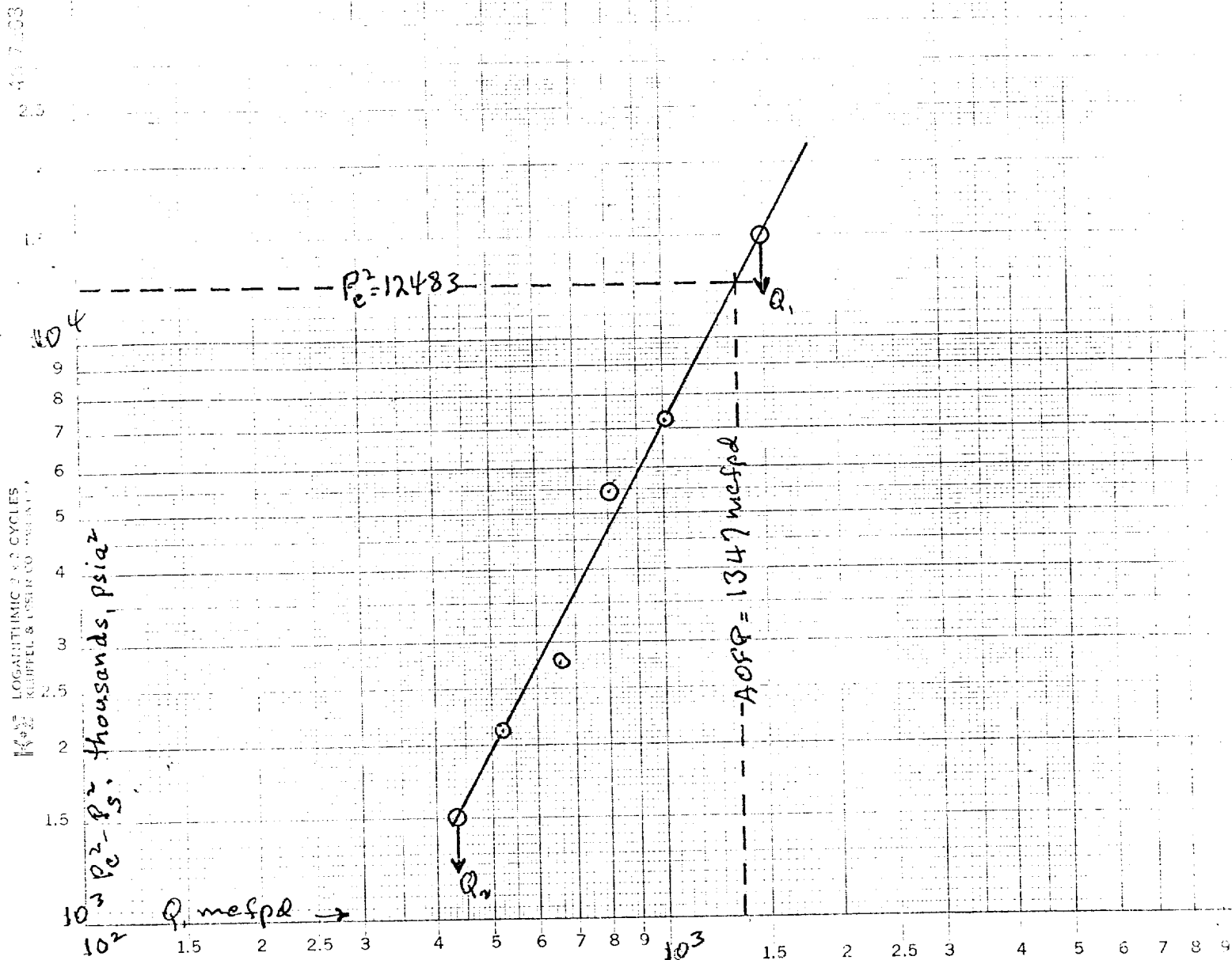
$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.3439$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1347$$

Absolute Open Flow 1347 Mcfd @ 15.025		Angle of Slope @ 61.68 deg.		Slope, n 0.5390	
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:	

YPC- Oakeson NV Federal No. 1

0-27-195-24E, Hoag Tank Morrow, Eddy Co, N.M.



$$Q_1 = 1491 \text{ mcfpd}$$

$$Q_2 = 431 \text{ mcfpd}$$

$$\log Q_1 = 3.1735$$

$$\log Q_2 = 2.6345$$

$$n = 0.5390$$

COMPANY YPC LEASE Oakman NV Federal WELL NO. 1 DATE 3-26-81

LOCATION: Unit 0 Section 27 Township 19S Range 24E

L	9024	H	9024	LH	1.020	% CO ₂	2.14	% N ₂	0.34	% H ₂ S	4.7
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A 11187 00000000
6099 357

[illegible]

LINE	S1	1	2	3	4	5
1 Q_m	—	0.522	0.657	0.803	1.002	1.002
2 T_w (W.H. °R)	523	536	539	541	542	
3 T_s (B.H. °R)	607	606	606	605	605	
4 $T = \frac{T_w + T_s}{2}$	565	571	572.5	573	573.5	573.5
5 Z (Est.)	824	821	820	820	829	828
6 TZ	465.560	468.791	469.450	469.860	475.432	474.858
7 GH/TZ	11.4942	11.4149	11.3989	11.3889	11.255	11.2691
8 e^S (Table XIV)	1.53884	1.5343	1.5334	1.5328	1.5251	1.5259
9 $1 - e^S$ (Table XIV)		0.3482	0.3478	0.3476	0.3443	0.3447
10 P_t	2.8483	2.5992	2.5152	2.412	1.85612	1.85612
11 $P_t^2/1000$	8112.2	6755.8	6326.2	4584.74	3445.5	3445.5
12 F_r (Table XV)	0.43103	0.42806	0.42746	0.42708	0.42208	0.42259
13 $F_c = F_r TZ$		4.5904	4.597	4.6009	4.6554	4.6498
14 $F_c Q_m$		2.396	3.020	3.694	4.665	4.659
15 $L/H (F_c Q_m)^2$		5.742	9.121	13.649	21.76	21.71
16 $F_w = L/H (F_c Q_m)^2 (1 - e^S)$		2.0	3.2	4.74	7.5	7.5
17 $P_w^2 = P_t^2 + F_w$		6757.8	6329.4	4589.48	3453.0	3453.0
18 $P_s^2 = e^S P_w^2$	12483.4	10368.5	9705.5	7034.8	5266.2	5262.9
19 P_s	3533.2	3220.0	3115.4	2652.3	2294.8	2295.4
20 $P = \frac{P_t + P_s}{2}$	3190.7	2909.6	2815.3	2396.8	2075.5	2075.8
21 $P_r = (P/P_{cr})$	4.565	4.163	4.028	3.429	2.969	2.970
22 $T_r = (T/T_{cr})$	1.523	1.600	1.604	1.605	1.606	1.606
23 Z (Table XI)	0.824	0.821	0.820	0.820	0.828	0.828