

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date	
Company Yates Petroleum Corporation		Connection Transwestern Pipeline Co.	
Pool Pecos Slope - Abo Gas Undesignated Abo.		Formation Abo	
Completion Date 7-30-81		Total Depth 4050' KB	
Plug Back TD 4032' KB		Elevation 3806.2' GL	
Casing Size 4-1/2" Wt. 9.5# ID 4.090 Set At 4050'		Perforations: From 3732' To 3744'	
Tubing Size 2-7/8" Wt. 6.5# ID 2.441 Set At 3698'		Perforations: From - To -	
Type Well - Single - Blindhead - G.G. or G.O. Multiple Single		Packer Set At 3698'	
Producing thru Tubing		Reservoir Temp. °F 106° @ 3738'	
Mean Annual Temp. °F 62°		Baro. Press. - P _a 13.2	
L 3740		H 3740	
Cg .653		% CO ₂ 0.27	
% N ₂ 8.77		% H ₂ S 0	
Prover -		Meter Run 2"	
Taps Flanged		County Chaves	
State New Mexico		Farm or Lease Name Cockleburr "RD" St.	
Well No. 1		Unit Sec. Twp. Rge. M 17 7S 25E	

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							960				days
1.	2.067	x	.375	320	14.0	57	335	65			24 hrs
2.	2.067	x	.375	320	8.0	57	636	65			24 hrs
3.	2.067	x	.375	320	5.6	57	733	65			24 hrs
4.	2.067	x	.375	330	3.3	52	822	65			24 hrs
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (14 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	.6689	68.3	333.2	1.003	1.237	1.030	58
2	.6689	51.5	333.2	1.003	1.237	1.030	44
3	.6689	43.3	333.2	1.003	1.237	1.030	37
4	.6689	33.7	343.2	1.008	1.237	1.031	29
5							

NO.	P _r	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	.51	517	1.48	.943	dry		.653	X X X X X X X X	654	350
2	.51	517	1.48	.943				X X X X X		
3	.51	517	1.48	.943						
4	.52	512	1.46	.941						
5										

NO.	P _r	P _w	P _w ²	P _r ² - P _w ²	(1) $\frac{P_r^2}{P_r^2 - P_w^2} =$	(2) $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n =$
1	121.2		121.3	825.8	1.1469	1.0856
2	421.5		421.5	525.6		
3	556.8		556.8	390.3		
4	697.6		697.6	249.5		
5						

Absolute Open Flow		Angle of Slope	
63	Mcf/d @ 15.025		.599

Remarks			

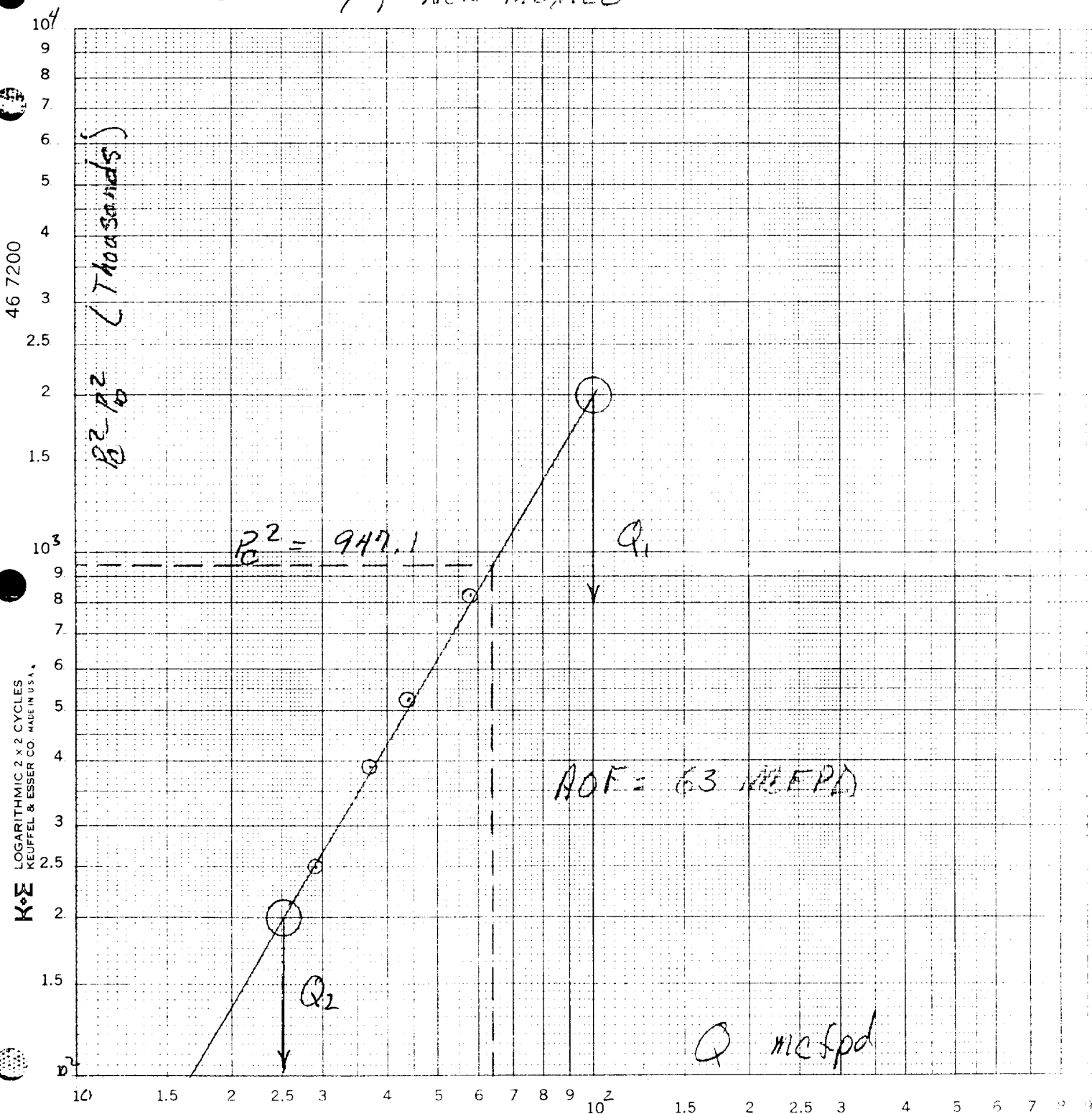
Approved By Division	Conducted By:	Calculated By:	Checked By:
	David Weaver	Al Springer	

Yates Petroleum Corp.

Cockleburr "KD" St. #1

Unit M, Sec 17, T-7S, R-25E

Chaves County, New Mexico



$$(P_2^2 - P_w^2)_1 = 2000$$

$$(P_2^2 - P_w^2)_2 = 200$$

$$Q_1 = 100$$

$$Q_2 = 25.2$$

$$\log Q_1 = 2.00000$$

$$\log Q_2 = 1.40146$$

$$n = .59860 = .599$$

WORKSHEET FOR CALCULATION OF ST. C COLUMN WELLHEAD PRESSURE (P_w)

COMPANY Yates Petroleum Corp LEASE Cockburn Rd SE WELL NO. #1 DATE 1/3/62

LOCATION: Unit M Section 17 Township 7S Range 25E

L 3940' H 3940' L/H 1.000 G .653 % CO₂ 0.27 % N₂ 8.77 % H₂S 0

d 2.441 F_r .010763 GH 2442 P_{cr} 654 T_{cr} 350

LINE	Rate #1	Rate #2	Rate #3	Rate #11	TABLE IX & X	TABLE IX & X
1 Q _m	.058	.044	.037	.029		
2 Q _m (Table IV)	525	525	525	525		
3 Q _m (Table IV)	366	366	366	366		
4 Q _m (Table IV)	545.5	545.5	545.5	545.5		
5 P _r (Table IV)	.950	.912	.899	.889		
6 P _r	518.23	497.50	496.40	484.95		
7 S _r (Table IV)	4.012	4.909	4.886	5.036		
8 e ^s (Table XIV)	1.135	1.202	1.265	1.298		
9 1-e ^s (Table XIV)	.135	.168	.196	.192		
10 P _r	348.2	649.2	746.2	835.2		
11 P _r (Table XV)	121.2	421.5	536.8	697.6		
12 P _r (Table XV)	.010763	.010763	.010763	.010763		
13 F _c = F _r T _r	5.578	5.355	5.278	5.220		
14 F _c Q _m	.324	.236	.195	.151		
15 L/H (F _c Q _m) ²	.105	.056	.038	.023		
16 F _w = L/H (F _c Q _m) ² (1-e ^s)	.017	.007	.006	.004		
17 P _w ² = P _r ² + F _w	121.3	421.5	556.8	697.6		
18 P _s ² = e ^s P _w ²	144.7	506.6	671.0	842.7		
19 P _s	380.0	711.8	819.1	918.0		
20 P = (P _t + P _s)	364.3	680.5	782.7	876.6		
21 P _r = (P/P _{cr})	.55	1.04	1.20	1.34		
22 T _r = (T/T _{cr})	1.1	1.56	1.56	1.56		
23 T _r (Table XI)	.950	.912	.899	.889		

ILLEGIBLE