NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 9-1-65

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELLS

RECEIVED

JUN 29 1982

O. C. D.
ARTESIA, OFFICE

SF file C-122 file

Type Test: [X] Initial [ ] Annual [ ] Special		Test Date: 5-2-82	
Company: Yates Petroleum Corporation ✓	Connection: Transwestern Pipeline Co.		Unit: LG 4334
Pool: Pecos Slope Abo	Formation: Abo		
Completion Date: 3-2-82	Total Depth: 4200'	Plug Back TD: 4173'	Elevation: 3809' GR
Farm or Lease Name: Sparrow SP State			
Csg. Size: 4-1/2" / Wt.: 9.5# / d: 4.090 / Set At: 4186'	Perforations: From 3507' To 3674'		Well No.: 1
Tbg. Size: 2-3/8" / Wt.: 4.7# / d: 1.995 / Set At: 3630'	Perforations: From To		Unit: C / Sec.: 32 / Twp.: 6S / Rge.: 25E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single	Packer Set At: -		County: Chaves
Producing Thru: Tubing	Reservoir Temp. °F: 95° @ 3630'	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2
State: New Mexico			

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
3630'	3630'	.720	8.34	5.76	-	-	2"	Flange

	FLOW DATA				TUBING DATA		CASING DATA		
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	Duration of Flow
SI					991				days
1.	2.067 x 1.250	220	38	67	880	61			24 hrs
2.	2.067 x 1.250	230	40	67	740	63			24 hrs
3.	2.067 x 1.250	300	34	67	500	60			24 hrs
4.	2.067 x 1.250	230	38	67	600	60			24 hrs
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 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	8.120	93.93	232.2	.9933	1.179	1.021	912
2	8.120	98.43	242.2	.9933	1.179	1.021	956
3	8.120	103.2	313.2	.9933	1.179	1.028	600
4	8.120	96.1	243.2	.9933	1.179	1.021	1025
5							

NO.	P_t	Temp. °R	T_r	Z
1	.34	527	1.456	.960
2	.3520	527	1.456	.959
3	.46	527	1.456	.947
4	.35	527	1.456	.959
5				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure 688 P.S.I.A. _____ P.S.I.A.
Critical Temperature 362 R _____ R

P_c 1004.2 P_c^2 1004.4

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	661.3	820.5	673.16	335.2
2	567.3	761.6	580.0	428.4
3	263.37	885.10	783.4	225
4	376.0	747.26	558.4	450
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.0$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3.1314$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2855$

Absolute Open Flow 2855 Mcfd @ 15.025 | Angle of Slope θ _____ | Slope, n 1.0364

Remarks: Static pressure by Bennett Wireline, flowing pressure by DWT. Calculations – Worksheet C-122D attached.

Approved By Commission:	Conducted By: David Weaver	Calculated By: Scott Yates	Checked By:

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

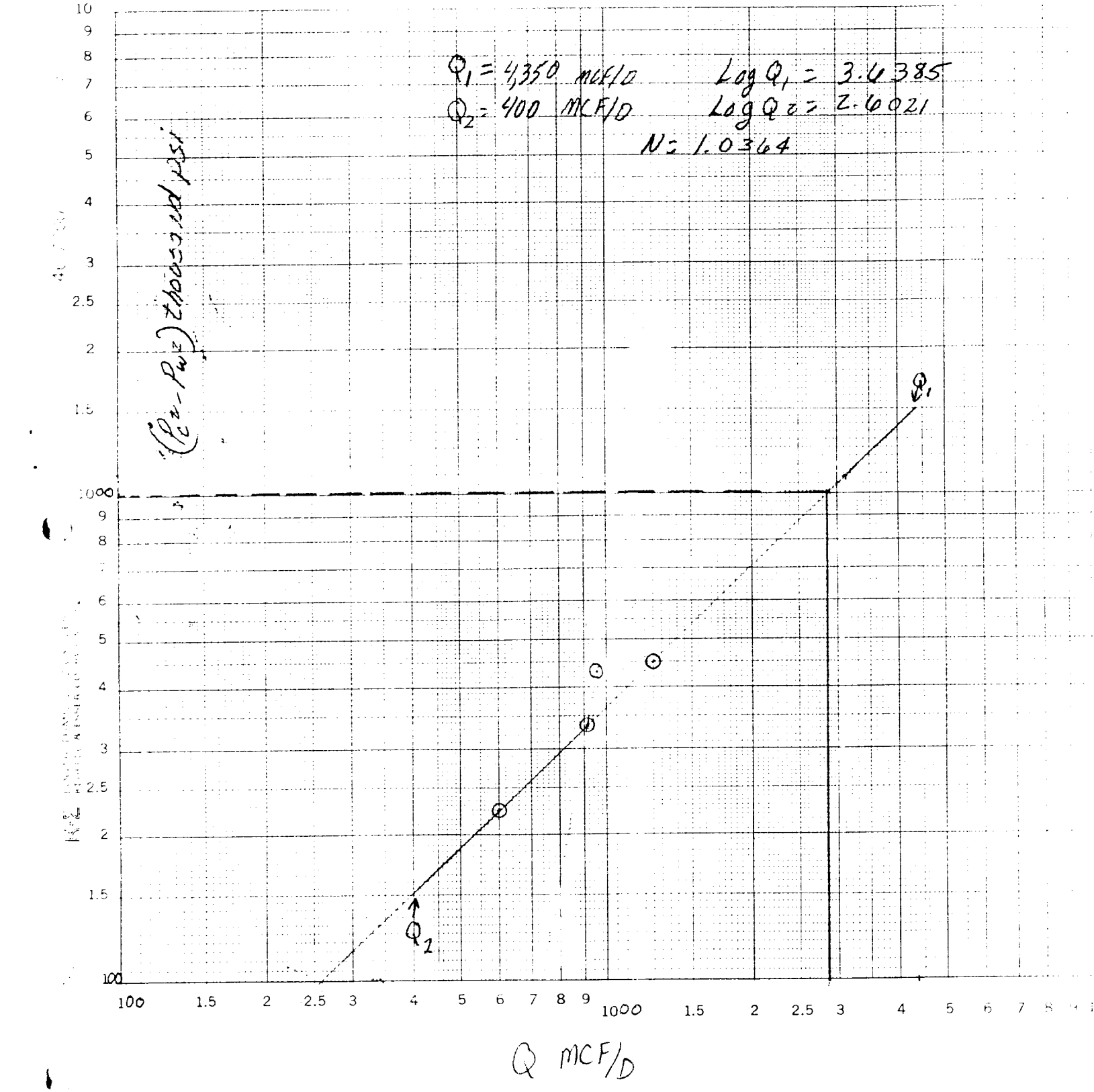
COMPANY Yates Pet. Corp. LEASE Sparrow SP St WELL NO. 1 DATE 4-23-82

LOCATION: Unit C Section 32 Township 6S Range 25E

L 3630 H 3630 L/H 1 G .720 % CO_2 2.34 % N_2 5.7% % H_2S 0

d 1.995 F_r .018231 GH 2613 P_{cr} 688 T_{cr} 362

LINE	1st Trial	1st Plate	2nd Plate	2nd Trial	3rd Plate		3rd Trial			
1 Q_m	.912	.912	.956	.753	.660		1.025			
2 T_w (W.H. °R)	521	521	523	522	520		520			
3 T_s (B.H. °R)	555	555	554	555	555		555			
4 $T_F = \frac{(T_w + T_s)}{2}$	539	539	539	539	537.5		537.5			
5 Z (Table XI)	.900	.876	.873	.885	.917		.901			
6 TZ	484.2	471.3	470.5	477	492.9		484.3			
7 GH/TZ	5.399	5.544	5.571	5.477	5.301		5.396			
8 e^s (Table XIV)	1.224	1.23	1.223	1.228	1.220		1.224			
9 $1-e^{-s}$ (Table XIV)	.183	.186	.181	.186	.180		.183			
10 P_t	813.2	813.2	753.2	753.2	513.2		613.2			
11 $P_t^2/1000$	661.3	661.3	567.3	567.3	263.4		376.0			
12 F_r (Table XV)	.018231	.018231	.018231	.018231	.018231		.018231			
13 $F_c = F_r TZ$	8.831	8.592	8.578	8.696	8.986		8.829			
14 $F_c Q_m$	8.05	7.836	8.200	8.313	5.391		9.050			
15 $L/H (F_c Q_m)^2$	64.6	61.4	67.24	69.11	29.07		81.9			
16 $F_w = L/H(F_c Q_m)^2(1-e^{-s})$	11.86	11.421	12.31	12.85	5.232		14.9			
17 $P_w^2 = P_t^2 + F_w$	673.16	672.7	580	580.1	268.6		391.0			
18 $P_s^2 = e^s P_w^2$	823.9	827.4	715.2	712.4	327.7		478.6			
19 P_s	907.7	909.6	845.6	844.	572.4		691.8			
20 $P = (\frac{P_t + P_s}{2})$	860.5	861.4	799	798.6	542.8		652.5			
21 $P_r = (P/P_{cr})$	1.25	1.25	1.16	1.16	.79		.95			
22 $T_r = (T/T_{cr})$	1.49	1.49	1.48	1.48	1.48		1.48			
23 Z (Table XI)	.876	.876	.873	.885	.917		.901			


Q_1 = 4,350 MCF/D
Q_2 = 400 MCF/D
Log Q_1 = 3.6385
Log Q_2 = 2.6021
N = 1.0364
$(P_{e^2} - P_{w^2})$ thousands psi
Q MCF/D
Q_1
Q_2