

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

Form C-122

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 9/10/03		30-025-36223			
Company Yates Petroleum Corporation					Connection 8/7/03						
Pool Wildcat Atoka					Formation Atoka					Unit	
Completion Date 8/6/03			Total Depth 14437		Plug Back TD 12800		Elevation 4219		Farm or Lease Name Big Hat State Unit		
Csg. Size 7.000	Wt. 26.000	d 6.276	Set At 14427	Perforations: From 12623 To 12633				Well No. 3			
Tbg. Size 2.875	Wt. 1.187	d 2.151	Set At 12400	Perforations: From 12623 To 12633				Unit B	Sec. 3	Twp. 16S	Rge. 33E
Type Well Single					Packer Set At 12400			County Lea			
Producing Thru Tubing		Resv. Temp. °F 179 @ 12350		Mean Temp. °F 62		Baro. Press. - Pa 13.2			State NM		
L 12800	H 12800	Gg 0.716	%CO ₂ 0.339	%N ₂ 2.450	%H ₂ S 0.000	Prover 0.000	Meter Run 2.000	Taps Flange			

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
Sl.	0.000	x	0.000	0	0.0	0	2700	0			0
1.	2.067	x	0.375	520	71.0	60	1450	60			24
2.	2.067	x	0.375	520	88.0	60	1140	60			24
3.	2.067	x	0.375	520	102.0	60	830	60			24
4.	2.067	x	0.375	520	111.0	60	520	60			24
5.		x									

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{hwP_m}$	Pressure P _m	Flow Temp. Factor Ft	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	0.669	194.6	533.2	1.0000	1.182	1.065	164
2.	0.669	216.6	533.2	1.0000	1.182	1.065	182
3.	0.669	233.2	533.2	1.0000	1.182	1.065	196
4.	0.669	243.3	533.2	1.0000	1.182	1.065	205
5.							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	10	Mcf/bbl.
1.	0.80	520	1.34	0.882	A.P.I. Gravity of Liquid Hydrocarbons	50.000	Deg.
2.	0.80	520	1.34	0.882	Specific Gravity Separator Gas	0.716	XXXXXXXXXX
3.	0.80	520	1.34	0.882	Specific Gravity Flowing Fluid	XXXXXXXXXX	1.002
4.	0.80	520	1.34	0.882	Critical Pressure	665	655
5.					Critical Temperature	387	481°

Pc	2713.2	Pc²	7361.5
NO.	P _i ²	P _w ²	P _w ² - P _i ²
1.	2141.0	1463.4	2141.4
2.	1329.9	1153.4	1330.4
3.	711.0	843.6	711.7
4.	284.3	534.3	285.4
5.			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.221$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 212$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.161$

Absolute Open Flow	212	Mcf/d @ 15.025	Angle of Slope θ	37	Slope, n	0.748
Remarks:						

Approved By Commission <i>Chris Williams</i>	Conducted By: Jeremy Fitzer	Calculated By: Misty Carter	Checked By: George Freeman
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WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

DATE 9/10/03

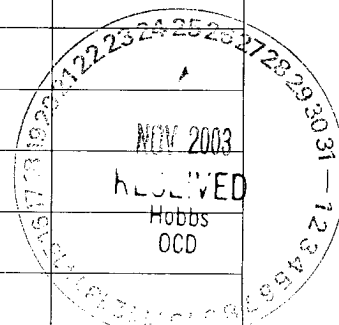
COMPANY Yates Petroleum Corporation LEASE Big Hat State Unit WELL NO. 3

LOCATION: Unit B Section 3 Township 16S Range 33E

L 12800 H 12800 L/H 1.000 G 1.002 %CO₂ 0.339 %N₂ 2.450 %H₂S 0.000

d 2.151 Fr 0.014603 GH 12828.2 Pcr 655.3 Tcr 481.3

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.164	0.182	0.196	0.205	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	639	639	639	639	
4 T = (Tw+Ts) / 2	579.2	579.2	579.2	579.2	
5 Z (Est.)	0.561	0.527	0.570	0.751	
6 TZ	324.8	305.2	330.2	435.1	
7 GH / TZ	39.497	42.031	38.854	29.486	
8 e ^{As} (Table XIV)	4.393	4.836	4.292	3.021	
9 1-e ^{As} (Table XIV)	0.772	0.793	0.767	0.669	
10 Pt	1463.2	1153.2	843.2	533.2	
11 Pt ² / 1000	2141.0	1329.9	711.0	284.3	
12 Fr (Table XV)	0.014603	0.014603	0.014603	0.014603	
13 Fc = FrTZ	4.743	4.457	4.821	6.353	
14 FcQm	0.78	0.81	0.95	1.30	
15 L / H(FcQm) ²	0.6	0.7	0.9	1.7	
16 Fw = L / H(FcQm) ² (1-e ^{As})	0.47	0.52	0.69	1.13	
17 Pw ² = Pt ² +Fw	2141.4	1330.4	711.7	285.4	
18 Ps ² = e ^{As} Pw ²	9406.5	6433.4	3054.2	862.2	
19 Ps	3067.0	2536.4	1747.6	928.6	
20 P = (Pt+Ps) / 2	2265.1	1844.8	1295.4	730.9	
21 Pr = (P / Pcr)	3.46	2.82	1.98	1.12	
22 Tr = (T / Tcr)	1.20	1.20	1.20	1.20	
23 Z (Table XI)	0.561	0.527	0.570	0.751	



Company Yates Petroleum Corporation
Well Big Hat State Unit #3
Location B 3-16S-33E

County
Date

Lea
9-10-03

Q, Mcfd

10⁴

10³

10²

10³

AOF = 212

10⁴

P₀-P_{wf}

