

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 1/6/04		3D-025-36384									
Company Yates Petroleum Corporation						Connection 1/21/04											
Pool Wildcat Morrow						Formation Morrow						Unit					
Completion Date 1/6/04			Total Depth 12580			Plug Back TD 12462			Elevation 4188		Farm or Lease Name Kris State Unit						
Csg. Size 5.500		Wt. 17.000		d 4.892		Set At 12580		Perforations: From 12336 To 12343				Well No. 1					
Tbg. Size 2.875		Wt. 6.500		d 2.441		Set At 12184		Perforations: From 12336 To 12343				Unit Sec. Twp. Rge. D 28 11S 34E					
Type Well Single						Packer Set At 12184						County Lea					
Producing Thru Tubing			Resv. Temp. °F 177 @ 12150			Mean Temp. °F 62			Baro. Press. - Pa 13.2			State NM					
L 12184		H 12184		Gg 0.650		%CO ₂ 0.936		%N ₂ 1.316		%H ₂ S 0.000		Prover 0.000		Meter Run 4.000		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	
SI.	0.000	x	0.000	0	0.0	0	2700	0			0
1.	4.026	x	2.000	1700	24.0	60	2050	60			24
2.	4.026	x	2.000	1700	29.0	60	1933	60			24
3.	4.026	x	2.000	1700	33.0	60	1817	60			24
4.	4.026	x	2.000	1700	37.0	60	1700	60			24
5.		x									

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{hwPm}$	Pressure Pm	Flow Temp. Factor Ft	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1.	19.810	202.8	1713.2	1.0000	1.240	1.165	5805
2.	19.810	222.9	1713.2	1.0000	1.240	1.165	6381
3.	19.810	237.8	1713.2	1.0000	1.240	1.165	6807
4.	19.810	251.8	1713.2	1.0000	1.240	1.165	7208
5.							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
					25	
					A.P.I. Gravity of Liquid Hydrocarbons	59.100 Deg.
1.	2.55	520	1.42	0.737	Specific Gravity Separator Gas	0.650
2.	2.55	520	1.42	0.737	Specific Gravity Flowing Fluid	0.762
3.	2.55	520	1.42	0.737	Critical Pressure	672 P.S.I.A.
4.	2.55	520	1.42	0.737	Critical Temperature	367 °R
5.						

NO.	Pi ²	Pw	Pw ²	Pc ² - Pw ²
1.	4256.8	2151.9	4630.7	2730.8
2.	3787.7	2058.2	4236.0	3125.4
3.	3349.6	1964.0	3857.1	3504.3
4.	2935.1	1871.7	3503.2	3858.3
5.				

Pc 2713.2 Pc² 7361.5

(1) $\frac{Pc^2}{Pc^2 - Pw^2} = 2.101$

AOF = Q $\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 10454$

(2) $\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 1.536$

Absolute Open Flow 10454 Mcfd @ 15.025				Angle of Slope θ 30		Slope, n 0.578	
Remarks:							
Approved By Commission:							
Conducted By: Noel Gomez		Calculated By: Misty Carter		Checked By: George Freeman			

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

DATE 1/6/04

COMPANY Yates Petroleum Corporation LEASE Kris State Unit WELL NO. 1

LOCATION: Unit D Section 28 Township 11S Range 34E

L 12184 H 12184 L/H 1.000 G 0.762 %CO₂ 0.936 %N₂ 1.316 %H₂S 0.000

d 2.441 Fr 0.010495 GH 9283.0 Pcr 668.2 Tcr 404.2

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	5.805	6.381	6.807	7.208	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	637	637	637	637	
4 T = (Tw+Ts) / 2	578.2	578.2	578.2	578.2	
5 Z (Est.)	0.734	0.730	0.727	0.726	
6 TZ	424.3	421.8	420.2	419.7	
7 GH / TZ	21.881	22.009	22.091	22.119	
8 e ^s (Table XIV)	2.272	2.283	2.290	2.292	
9 1-e ^{-s} (Table XIV)	0.560	0.562	0.563	0.564	
10 Pt	2063.2	1946.2	1830.2	1713.2	
11 Pt ² / 1000	4256.8	3787.7	3349.6	2935.1	
12 Fr (Table XV)	0.010495	0.010495	0.010495	0.010495	
13 Fc = FrTZ	4.452	4.427	4.410	4.404	
14 FcQm	25.85	28.25	30.02	31.75	
15 L / H(FcQm) ²	668.0	797.8	901.1	1007.8	
16 Fw = L / H(FcQm) ² (1-e ^{-s})	373.90	448.31	507.48	568.11	
17 Pw ² = Pt ² +Fw	4630.7	4236.0	3857.1	3503.2	
18 Ps ² = e ^s Pw ²	10520.7	9669.3	8832.6	8029.6	
19 Ps	3243.6	3109.5	2972.0	2833.7	
20 P = (Pt+Ps) / 2	2653.4	2527.9	2401.1	2273.4	
21 Pr = (P / Pcr)	3.97	3.78	3.59	3.40	
22 Tr = (T / Tcr)	1.43	1.43	1.43	1.43	
23 Z (Table XI)	0.734	0.730	0.727	0.726	

Company
Well
Location

Yates Petroleum Corporation
Kris State Unit #1
D 28-11S-34E

County
Date

Lea
1-6-04

Q, Mcfd

