

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 5/13/04		30-025-36523			
Company Yates Petroleum Corporation						Connection 6/3/04					
Pool Sand Springs Atoka-Morrow (Gas)						Formation Morrow					
Completion Date 5/19/04			Total Depth 12700			Plug Back TD 12654		Elevation 4180		Farm or Lease Name Lagarto AMZ State	
Csg. Size 5.500	Wt. 17.000	d 4.892	Set At 12700	Perforations: From 12244 To 12273				Well No. 2			
Tbg. Size 2.875	Wt. 6.500	d 2.441	Set At 11980	Perforations: From 12244 To 12273				Unit J	Sec. 1	Twp. 11S	Rge. 34E
Type Well Single						Packer Set At 12700		County Lea			
Producing Thru Tubing		Resv. Temp. °F 184 @ 11950		Mean Temp. °F 62		Baro. Press. - Pa 13.2		State NM			
L 12700	H 12700	Gg 0.675	%CO ₂ 1.115	%N ₂ 1.230	%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
Sl.	0.000	x	0.000	0	0.0	0	2650	0			0
1.	4.026	x	2.000	1500	89.0	60	1890	60			24
2.	4.026	x	2.000	1500	104.0	60	1760	60			24
3.	4.026	x	2.000	1500	119.0	60	1630	60			24
4.	4.026	x	2.000	1500	132.0	60	1500	60			24
5.		x									

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{hwP_m}$	Pressure P _m	Flow Temp. Factor F _L	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	19.810	367.0	1513.2	1.0000	1.217	1.168	10335
2.	19.810	396.7	1513.2	1.0000	1.217	1.168	11172
3.	19.810	424.3	1513.2	1.0000	1.217	1.168	11950
4.	19.810	446.9	1513.2	1.0000	1.217	1.168	12586
5.							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	25	Mc/bbl.
					A.P.I. Gravity of Liquid Hydrocarbons	50.000	Deg.
1.	2.25	520	1.38	0.733	Specific Gravity Separator Gas	0.675	XXXXXXXXXX
2.	2.25	520	1.38	0.733	Specific Gravity Flowing Fluid	XXXXXXXXXX	0.795
3.	2.25	520	1.38	0.733	Critical Pressure	672	P.S.I.A. 668
4.	2.25	520	1.38	0.733	Critical Temperature	375	°R 415
5.							

P _c 2663.2	P _c 7092.6		
NO.	P _f	P _w	P _w ²
1.	3622.2	2201.1	4845.0
2.	3144.2	2135.2	4559.3
3.	2700.1	2075.2	4306.5
4.	2289.8	2015.9	4063.7
5.			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.800$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.975$	
AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n$			

Absolute Open Flow	22063	Mcfd @ 15.025	Angle of Slope	33	Slope, n	0.661
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Remarks:

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Noel Gomez	Misty Carter	George Freeman

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

DATE 5/13/04

COMPANY Yates Petroleum Corporation LEASE Lagarto AMZ State WELL NO. 2

LOCATION: Unit J Section 1 Township 11S Range 34E

L 12700 H 12700 L/H 1.000 G 0.795 %CO₂ 1.115 %N₂ 1.230 %H₂S 0.000

d 2.441 Fr 0.010495 GH 10101.6 Pcr 667.9 Tcr 415.2

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	10.335	11.172	11.950	12.586	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	644	644	644	644	
4 T = (Tw+Ts) / 2	581.7	581.7	581.7	581.7	
5 Z (Est.)	0.718	0.713	0.709	0.706	
6 TZ	417.5	414.5	412.4	410.9	
7 GH / TZ	24.197	24.368	24.496	24.581	
8 e ^{as} (Table XIV)	2.478	2.494	2.507	2.514	
9 1-e ^{as} (Table XIV)	0.596	0.599	0.601	0.602	
10 Pt	1903.2	1773.2	1643.2	1513.2	
11 P _t ² / 1000	3622.2	3144.2	2700.1	2289.8	
12 Fr (Table XV)	0.010495	0.010495	0.010495	0.010495	
13 Fc = FrTZ	4.381	4.351	4.328	4.313	
14 FcQm	45.28	48.60	51.72	54.28	
15 L / H(FcQm) ²	2050.3	2362.2	2674.8	2946.5	
16 Fw = L / H(FcQm) ² (1-e ^{as})	1222.87	1415.02	1606.40	1773.88	
17 Pw ² = P _t ² +Fw	4845.0	4559.3	4306.5	4063.7	
18 Ps ² = e ^{as} Pw ²	12004.8	11369.7	10795.4	10217.0	
19 Ps	3464.8	3371.9	3285.6	3196.4	
20 P = (Pt+Ps) / 2	2684.0	2572.5	2464.4	2354.8	
21 Pr = (P / Pcr)	4.02	3.85	3.69	3.53	
22 Tr = (T / Tcr)	1.40	1.40	1.40	1.40	
23 Z (Table XI)	0.718	0.713	0.709	0.706	

Company
Well Location
10^5

Yates Petroleum Corporation
Lagarto AMZ State #2
J 1-11S-34E

County
Date

Lea
5-13-04

Q, Mcfd

10^4

10^3

10^4

10^5
AOF = 22063

10^6

Pwf-Pw

