

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 6/30/03		30-025-29973	
Company Yates Petroleum Corporation				Connection 3/26/04					
Pool Eidson Morrow, North				Formation Morrow		Unit			
Completion Date 7/16/03		Total Depth 14084		Plug Back TD 13447		Elevation 4122		Farm or Lease Name Otis State Unit	
Csg. Size 4.500	Wt. 11.600	d 4.000	Set At 14084	Perforations: From 13434 To 13448		Well No. 1			
Tbg. Size 2.375	Wt. 4.700	d 1.995	Set At 13350	Perforations: From 13434 To 13448		Unit A	Sec. 30	Twp. 15S	Rge. 34E
Type Well Single						Packer Set At 13350		County Lea	
Producing Thru Tubing		Resv. Temp. °F 188 @ 13416		Mean Temp. °F 62		Baro. Press. - Pa 13.2		State NM	
L 13350	H 13350	Gg 0.663	%CO ₂ 1.057	%N ₂ 0.981	%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
Sl.	0.000	x	0.000	0	0.0	0	3600	0			0
1.	2.067	x	0.625	300	67.0	60	1800	60			24
2.	2.067	x	0.625	300	84.0	60	1300	60			24
3.	2.067	x	0.625	300	96.0	60	800	60			24
4.	2.067	x	0.625	300	103.0	60	300	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.	1.866	144.9	313.2	1.0000	1.228	1.032	342
2.	1.866	162.2	313.2	1.0000	1.228	1.032	383
3.	1.866	173.4	313.2	1.0000	1.228	1.032	410
4.	1.866	179.6	313.2	1.0000	1.228	1.032	425
5.							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.47	520	1.40	0.940	50	
2.	0.47	520	1.40	0.940	50.000	
3.	0.47	520	1.40	0.940		
4.	0.47	520	1.40	0.940		
5.						

NO.	Pc	Pw	Pw ²	Pc ² - Pw ²	(1) $\frac{Pc^2}{Pc^2 - Pw^2} =$	(2) $\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n =$
1.	3287.7	1814.3	3291.8	9763.4	1.153	1.114
2.	1724.5	1315.2	1729.9	11325.4		
3.	661.3	817.4	668.1	12387.1		
4.	98.1	326.2	106.4	12948.8		
5.						

Absolute Open Flow		427	Mcf/d @ 15.025	Angle of Slope θ	37	Slope, n	0.762
Remarks:							

Approved By Commission: 	Conducted By: Rocky Harper	Calculated By: Misty Carter	Checked By: George Freeman
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WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

DATE 6/30/03

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

LOCATION: Unit A Section 30 Township 15S Range 34E

L 13350 H 13350 L / H 1.000 G 0.724 %CO₂ 1.057 %N₂ 0.981 %H₂S 0.000

d 1.995 Fr 0.017777 GH 9668.1 Pcr 670.6 Tcr 392.5

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.342	0.383	0.410	0.425	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	648	648	648	648	
4 T = (Tw+Ts) / 2	583.7	583.7	583.7	583.7	
5 Z (Est.)	0.762	0.789	0.855	0.941	
6 TZ	444.6	460.3	498.9	549.1	
7 GH / TZ	21.747	21.005	19.378	17.606	
8 e ^Λ s(Table XIV)	2.260	2.198	2.068	1.935	
9 1-e ^Λ -s(Table XIV)	0.558	0.545	0.516	0.483	
10 Pt	1813.2	1313.2	813.2	313.2	
11 Pt ² / 1000	3287.7	1724.5	661.3	98.1	
12 Fr (Table XV)	0.017777	0.017777	0.017777	0.017777	
13 Fc = FrTZ	7.903	8.182	8.869	9.762	
14 FcQm	2.71	3.14	3.64	4.14	
15 L / H(FcQm) ²	7.3	9.8	13.2	17.2	
16 Fw = L / H(FcQm) ² (1-e ^Λ -s)	4.08	5.37	6.83	8.30	
17 Pw ² = Pt ² +Fw	3291.8	1729.9	668.1	106.4	
18 Ps ² = e ^Λ sPw ²	7440.5	3802.2	1381.7	205.9	
19 Ps	2727.7	1949.9	1175.5	453.8	
20 P = (Pt+Ps) / 2	2270.5	1631.6	994.3	383.5	
21 Pr = (P / Pcr)	3.39	2.43	1.48	0.57	
22 Tr = (T / Tcr)	1.49	1.49	1.49	1.49	
23 Z (Table XI)	0.762	0.789	0.855	0.941	

Company Yates Petroleum Corporation
Well Otis State Unit #1
Location A 30-15S-34E
10^5

County
Date Lea
6-30-03

Q, Mcfd

