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See Rule 401 & Rule 1122

State of New Mexico
Energy Minerals and Natural Resources

Form C-122
Revised October, 1999

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

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OCD - ARTESIA

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator Fasken Oil and Ranch, Ltd.						Lease or Unit Name Ross Federal					
Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 4-20-02		Well No. 4			
Completion Date 12-3-01		Total Depth 9832'		Plug Back TD 9754'		Elevation 3710' GR		Unit Ltr. - Sec. - TWP - Rge. J 4 21S 24E			
Csg. Size 4-1/2"	Wt. 11.6	d 4.000	Set At 9832'	Perforations: From: 9576' To: 9662'				County Eddy			
Tbg. Size 2-3/8"	Wt. 4.7	d 1.995	Set At 9370"	Perforations: From: To:				Pool Avalon			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single						Packer Set At 9350'		Formation Morrow			
Producing Thru Tubing		Reservoir Temp. °F 168		Mean Annual Temp. °F 60		Baro. Press - P _a 13.2		Connection Fasken - Transporter			
L 9370'	H 9370'	Gg 0.625	%CO ₂ 0.83	%N ₂ 0.20	%H ₂ S 0.00	Prover Orifice		Meter Run 3"	Taps Flange		

FLOW DATA					TUBING DATA		CASING DATA		Duration Of Flow	
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
SI						2285	80	0	80	-
1.	3.068" x 1.25"		100	35.4	80	100	80	0	80	24 hr
2.										
3.										
4.										
5.										

RATE OF FLOW CALCULATIONS							
No.	COEFFICIENT (24 HOUR)	h _w P _m	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	7.577	63.33	113.2	0.9813	1.265	1.009	601
2.							
3.							
4.							
5.							

No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.168	540	1.479	0.982	A. P. I. Gravity of Liquid Hydrocarbons	Deg.
2.					Specific Gravity Separator Gas 0.625	XXXXXXXXXX
3.					Specific Gravity Flowing Fluid 0.625	XXXXXX
4.					Critical Pressure 674	P.S.I.A.
5.					Critical Temperature 365	R.

P _c 2298		P _c ² 5280.8	
No.	P _i ²	P _w	P _w ²
1.	12.8	159.1	25.3
2.			
3.			
4.			
5.			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{5280.8}{5266.5}$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.005$

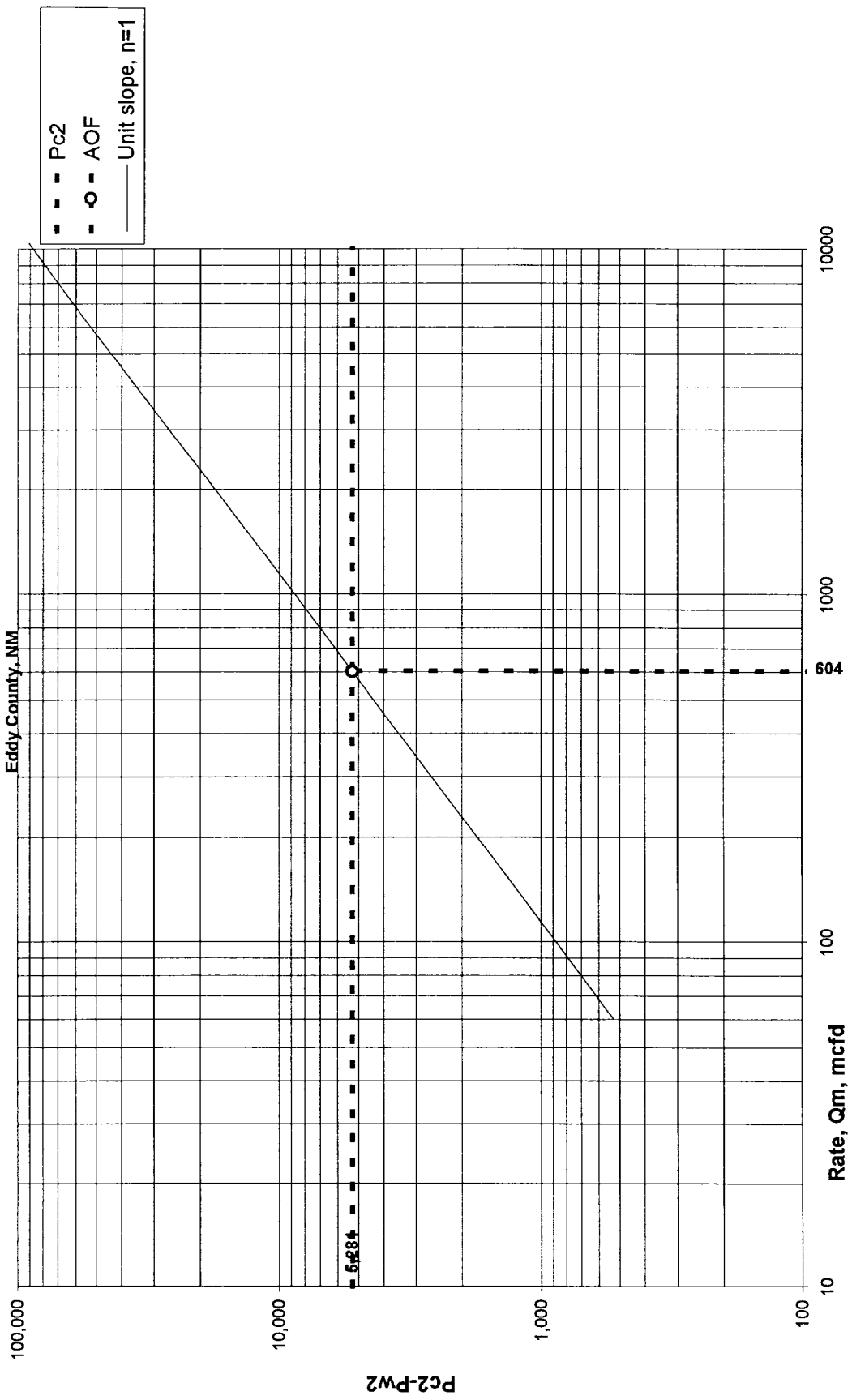
AOF = Q (601) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 604$

Absolute Open Flow 604	Mcf/d @ 15.025	Angle of Slope θ: 45	Slope, n: 1.00
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Remarks:
An approximation of AOF was made with unit slope through the maximum rate.

Approved By Division	Conducted By: Fasken Oil and Ranch, Ltd.	Calculated By: Carl Brown	Checked By:
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Fasken Oil and Ranch, Ltd.
 Ross Federal No. 4
 Unit J, Sec 4, T21S, R24E
 Cemetery (Morrow) Field
 Eddy County, NM



WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw)

C-122D

DATE: 04/20/2002

COMPANY Fasken Oil and Ranch, Ltd. LEASE Ross Federal WELL NO. 4

LOCATION: Unit J Section 4 Township 21S Range 24E

L 9370 H 9370 L / H 1 G 0.625 %CO₂ 0.2 %N₂ 0.83 %H₂S 0

d 1.995 Fr 0.018231 GH 5856.25 Pcr 674 Tcr 365

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.601				
2 Tw(W.H.DegR)	540				
3 Ts(B.H.DegR)	628				
4 T = (Tw+Ts) / 2	584				
5 Z (Est.)	0.978				
6 TZ	571.2				
7 GH / TZ	10.253				
8 e ^{As} (Table XIV)	1.469				
9 1-e ^{As} (Table XIV)	0.319				
10 Pt	113.2				
11 Pt ² / 1000	12.8				
12 Fr (Table XV)	0.018231				
13 Fc = FrTZ	10.413				
14 FcQm	6.258				
15 L / H(FcQm) ²	39.163				
16 Fw = L / H(FcQm) ² (1-e ^{As})	12.501				
17 Pw ² = Pt ² +Fw	25.3				
18 Ps ² = e ^{As} Pw ²	37.2				
19 Ps	192.8				
20 P = (Pt+Ps) / 2	153.0				
21 Pr = (P / Pcr)	0.227				
22 Tr = (T / Tcr)	1.600				
23 Z (Table XI)	0.978				