

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

RECEIVED Form C-128

OCT 29 1991

CLSF
File

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 1/7/91		O. C. D. ARTESIA OFFICE	
Company Yates Petroleum Corporation				Connection Transwestern Pipeline Company				
Pool Abo				Formation Pecos Slope				Unit
Completion Date 11/22/90		Total Depth 4100.0'		Plug Back TD 4046.0'		Elevation 3816.0'		Farm or Lease Name Red Rock NB Fed
Csg Size 4.500"	Wt. 9.500#	d 4.090"	Set At 4100.0'	Perforations: From 3698.0' To 3897.0'			Well No. 4	
Tbg Size 2.375"	Wt. 4.700#	d 1.995"	Set At 3615.0'	Perforations: From 0.0' To 0.0'			Unit Sec Twp Rge C 28 6S 25E	
Type Well Single				Packer Set At 3615.0'				County Chaves
Producing Thru Tubing		Resv. Temp. °F 96 @ 4100'		Mean Temp. °F 62.0		Baro. Press. - Pa 13.2 psia.		State New Mexico
L 3615.0'	H 3615.0'	Gg .649	%CO2 .79	%N2 5.11	%H2S 0.00	Prover 0.000"	Meter Run 2.000"	Taps Flange

FLOW DATA					TUBING DATA		CASING DATA		Duration of Flow
NO	Prover Orifice Size X Size	Press. psig	Diff. hw	Temp. °F	Press. psig	Temp. °F	Press. psig	Temp. °F	
SI	0.000 X 0.000	0	0.0	49	950	0	0	0	0 hrs.
1.	2.067 X 1.375	110	22.0	48	851	62	0	0	24 hrs.
2.	2.067 X 1.375	115	47.3	56	805	62	0	0	24 hrs.
3.	2.067 X 1.375	115	55.9	49	750	62	0	0	24 hrs.
4.	2.067 X 1.375	120	87.0	52	660	62	0	0	24 hrs.
5.	0.000 X 0.000	0	0.0	0	0	0	0	0	0 hrs.

RATE OF FLOW CALCULATIONS

NO	Coefficient (24 HOUR)	$\sqrt{hwP_m}$	Pressure P _m	Flow Temp Factor F _t	Gravity Factor F _g	Super Compress. Fact. F _{pv}	Rate of Flow Q, Mcfd
1.	10.204	52.06	123.20	1.012	1.241	1.010	674
2.	10.204	77.87	128.20	1.004	1.241	1.010	1000
3.	10.204	84.65	128.20	1.011	1.241	1.011	1095
4.	10.204	107.65	133.20	1.008	1.241	1.011	1389
5.	0.000	0.00	0.00	0.000	0.000	0.000	0

NO	Pr	Temp. °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	Dry	Mcf/bbl.
1.	.19	508	1.42	.980	A.P.I. Gravity of Liquid Hydrocarbons	0.000	Deg.
2.	.19	516	1.45	.981	Specific Gravity Separator Gas	.649	xxxxxxxxxxxxxx
3.	.19	509	1.43	.979	Specific Gravity Flowing Fluid	xxxxxx	.649
4.	.20	512	1.44	.979	Critical Pressure	665.2 PSIA	665.2 PSIA
5.	0.00	0	0.00	0.000	Critical Temperature	356.5°R	356.5°R

Pc	963.2	Pc ²	927.8						
NO	Pt ²	Pw	Pw ²	Pc ² -Pw ²	(1)	$\frac{Pc^2}{Pc^2-Pw^2} = \frac{2.0580}{}$	(2)	$\left[\frac{Pc^2}{Pc^2-Pw^2}\right]^n = \frac{1.7387}{}$	
1.	746.8	867.3	752.3	175.5					
2.	669.5	825.5	681.5	246.3					
3.	582.5	772.7	597.1	330.7					
4.	453.2	690.6	477.0	450.8					
5.	0.0	0.0	0.0	0.0					

ROF = Q

$\left[\frac{Pc^2}{Pc^2-Pw^2}\right]^n = \frac{2415 \text{ Mcfd}}{}$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2415 \text{ Mcfd}$$

Absolute Open Flow 2415 Mcfd @ 15.025 Angle of Slope, θ 37 Slope, n .766

Remarks:

Approved By:	Conducted By: David Weaver	Calculated By: Andrea Carpenter	Checked By:
--------------	-------------------------------	------------------------------------	-------------

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

Adopted 9-1-65

DATE 10/29/91

COMPANY Yates Petroleum Corporation LEASE Red Rock NB Fed WELL NO. 4

LOCATION: Unit C Section 28 Township 6S Range 25E

L 3615.0 H 3615.0 L/H 1.000 G .649 %CO₂ .79 %N₂ 5.11 %H₂S 0.00

d 1.995 Fr .017777 GH 2346.1 Pcr 665.2 Tcr 356.5

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.674	1.000	1.095	1.389	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	556.0	556.0	556.0	556.0	0.0
4 T=(Tw+Ts)/2	539.0	539.0	539.0	539.0	0.0
5 Z(Est.)	.874	.880	.888	.900	0.000
6 TZ	471.3	474.5	478.4	484.9	0.0
7 GH/TZ	4.978	4.945	4.904	4.839	0.000
8 e ^s (Table XIV)	1.205	1.204	1.202	1.199	0.000
9 1-e ^{-s} (Table XIV)	.170	.169	.168	.166	0.000
10 Pt	864.2	818.2	763.2	673.2	0.0
11 Pt ² /1000	746.8	669.5	582.5	453.2	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.379	8.435	8.509	8.622	0.000
14 FcQm	5.647	8.434	9.320	11.975	0.000
15 L/H(FcQm) ²	31.887	71.130	86.856	143.396	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	5.430	12.039	14.583	23.788	0.000
17 Pw ² =Pt ² +Fw	752.3	681.5	597.1	477.0	0.0
18 Ps ² =e ^s Pw ²	906.7	820.3	717.5	571.9	0.0
19 Ps	952.2	905.7	847.1	756.2	0.0
20 P=(Pt+Ps)/2	908.2	862.0	805.1	714.7	0.0
21 Pr=(P/Pcr)	1.37	1.30	1.21	1.07	0.00
22 Tr=(T/Tcr)	1.51	1.51	1.51	1.51	0.00
23 Z(Table XI)	.874	.880	.888	.900	0.000

Company	Yates Petroleum Corporation
Well	Red Rock NB Fed No. 4
Location	C, 28-6S-25E
County	Chaves
Date	10/29/91

