

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

Form C-122

cl5r
File

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 01/14/93	
Company Yates Petroleum Corp			Connection Yates Petroleum Corp		
Pool Abo			Formation Pecos Slope		Unit C. C. D.
Completion Date 01/08/1993		Total Depth 4200	Plug Back TD 4140		Elevation 3929
Farm or Lease Name Sparrow SP State					
Csg. Size 4.500	Wt. 10.500	d 4.052	Set At 4200	Perforations: From 3675 To 3833	
Tbg. Size 2.375	Wt. 4.700	d 1.995	Set At 3580	Perforations: From 3675 To 3833	
Type Well Single				Packer Set At 3580	County Chaves
Producing Thru Tubing		Resv. Temp. °F 105 @ 3754	Mean Temp. °F 62	Baro. Press. - Pa 13.2	State New Mexico
L 3580	H 3580	Gg 0.650	%CO ₂ 0.026	%N ₂ 6.879	%H ₂ S 0.000
Prover 0.000		Meter Run 2.000	Taps Flange		

FLOW DATA							TUBING DATA		CASING DATA		Duration
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	of Flow
Sl.	0.000	x	0.000	0	0.0	0	990	0			0
1	2.067	x	1.375	180	1.0	44	880	62			24
2	2.067	x	1.375	180	4.0	47	647	62			24
3	2.067	x	1.375	180	8.0	43	413	62			24
4	2.067	x	1.375	180	10.0	42	180	62			24
5		x									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{\text{hwPm}}$	Pressure Pm	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	10.200	13.9	193.2	1.0158	1.240	1.018	182
2	10.200	27.8	193.2	1.0127	1.240	1.018	363
3	10.200	39.3	193.2	1.0168	1.240	1.018	515
4	10.200	44.0	193.2	1.0178	1.240	1.018	576
5							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl
					0	
					0.000	Deg.
1	0.29	504	1.43	0.965	A.P.I. Gravity of Liquid Hydrocarbons	
2	0.29	507	1.43	0.965	Specific Gravity Separator Gas	0.650
3	0.29	503	1.42	0.964	Specific Gravity Flowing Fluid	0.650
4	0.29	502	1.42	0.964	Critical Pressure	659 P.S.I.A
5					Critical Temperature	353 °R

NO.	Pc	Pc'	Pw	Pw'	Pc' - Pw'
1	1003.2	1006.4	797.8	893.4	208.2
2			435.9	661.4	568.9
3			181.6	430.2	821.3
4			37.3	204.4	964.6
5					

(1) $\frac{Pc'}{Pc' - Pw'} = 1.225$ (2) $\left[\frac{Pc'}{Pc' - Pw'} \right]^n = 1.166$

AOF = Q $\left[\frac{Pc'}{Pc' - Pw'} \right]^n = 600$

Absolute Open Flow 600	Mcf/d @ 15 025	Angle of Slope 0 37	Slope, n 0.755
---------------------------	----------------	------------------------	-------------------

Remarks:

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

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

DATE 01/14/93

COMPANY Yates Petroleum Corp LEASE Sparrow SP State WELL NO. 5

LOCATION: Unit N Section 5 Township 7S Range 25E

L 3580 H 3580 L / H 1.000 G 0.650 %CO₂ 0.026 %N₂ 6.879 %H₂S 0.000

d 1.995 Fr 0.017777 GH 2327.0 P_{cr} 658.9 T_{cr} 353.2

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.182	0.363	0.515	0.576	
2 Tw(W.H.°R)	522	522	522	522	
3 Ts(B.H.°R)	565	565	565	565	
4 T = (Tw+Ts) / 2	543.2	543.2	543.2	543.2	
5 Z (Est.)	0.877	0.906	0.938	0.971	
6 TZ	476.4	492.3	509.5	527.3	
7 GH / TZ	4.885	4.726	4.567	4.413	
8 e ^s (Table XIV)	1.201	1.194	1.187	1.180	
9 1-e ^s (Table XIV)	0.167	0.162	0.157	0.153	
10 Pt	893.2	660.2	426.2	193.2	
11 Pt ² / 1000	797.8	435.9	181.6	37.3	
12 Fr (Table XV)	0.017777	0.017777	0.017777	0.017777	
13 Fc = FrTZ	8.469	8.752	9.058	9.373	
14 FcQm	1.54	3.17	4.66	5.40	
15 L / H(FcQm) ²	2.4	10.1	21.8	29.2	
16 Fw = L / H(FcQm) ² (1-e ^s)	0.40	1.64	3.42	4.45	
17 Pw ² = Pt ² +Fw	798.2	437.5	185.1	41.8	
18 Ps ² = e ^s Pw ²	958.7	522.3	219.6	49.3	
19 Ps	979.1	722.7	468.7	222.0	
20 P = (Pt+Ps) / 2	936.2	691.5	447.4	207.6	
21 Pr = (P / P _{cr})	1.42	1.05	0.68	0.32	
22 Tr = (T / T _{cr})	1.54	1.54	1.54	1.54	
23 Z (Table XI)	0.877	0.906	0.938	0.971	

Company
Well
Location

Yates Petroleum Corp
Sparrow SP State #5
N 5-7S-25E

County
Date

Chaves
01-14-93

