

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088
SANTA FE, NEW MEXICO 87501Form C-122
Revised 10-1-78

RECEIVED

C/SF MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 3-12-82		MAY 10 1982							
Company Yates Petroleum Corporation		Connection Transwestern Pipeline Company		O. C. D. ARTESIA OFFICE							
Pool Pecos Slope Abo		Formation Abo		Unit LG 2462							
Completion Date 11-27-81		Total Depth 4370'		Plug Back TD 4318'							
Elevation 3993.2 KB		Farm or Lease Name Conejo RH State									
Csg. Size 4-1/2"		Wt. 9.5#		d 4.090"							
Set At 4353		Perforations: From 3820' To 3950'		Well No. 2							
Tbg. Size 2-3/8"		Wt. 4.7#		d 1.995"							
Set At 3937'		Perforations: From To		Unit Sec. Twp. Hys. M 2 7S 25E							
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At None							
Producing Thru Tubing		Reservoir Temp. °F 105 @ 3950		Mean Annual Temp. °F 60							
Baro. Press. - P ₀ 13.2		State New Mexico									
L 3937		H 3937		G _g 0.660							
% CO ₂ 1.13		% N ₂ 4.37		% H ₂ S 0							
Prover ---		Meter Run 4"		Taps Flange							
FLOW DATA											
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	Duration of Flow
SI							986				days
1.	4.026 x 1.000			200	30	72	880	74			24 hrs
2.	4.026 x 1.000			200	42	72	865	74			24 hrs
3.	4.026 x 1.000			225	75	75	785	77			24 hrs
4.	4.026 x 1.000			300	95	75	717	77			24 hrs
5.											
RATE OF FLOW CALCULATIONS											
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{spv}	Rate of Flow Q, Mcfd				
1	4.753	79.97	213.2	0.9887	1.231	1.019	471				
2	4.753	94.63	213.2	0.9887	1.231	1.019	558				
3	4.753	133.66	238.2	0.9859	1.231	1.021	788				
4	4.753	172.49	313.2	0.9859	1.231	1.027	1017				
5											
NO.	R _g	Temp. °R	T _g	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.						
1	0.320	532	1.458	0.964	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.						
2	0.320	532	1.458	0.964	Specific Gravity Separator Gas _____ 0.660						
3	0.358	535	1.466	0.960	Specific Gravity Flowing Fluid _____ X X X X X						
4	0.470	535	1.466	0.948	Critical Pressure _____ 666 P.S.I.A.						
5					Critical Temperature _____ 365 R						
P _c 999.2 P _c ² 998.4					(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.328$						
NO.	F _c	P _w	P _w ²	P _c ² - P _w ²	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.0815$						
1	797.8		800.8	197.6							
2	771.2		775.5	222.9							
3	637.1		645.8	352.6							
4	533.2		547.9	450.5							
5											
Absolute Open Flow _____ 2150 Mcfd @ 15.025					Angle of Slope _____					Slope, n _____ 0.936	
Remarks: Static pressures by Bennett Wireline, flowing pressures by DWT calculations. Worksheet C122D attached.											
Approved By Division			Conducted By: David Weaver			Calculated By: Albert R. Stall			Checked By:		

WORKSHEET FOR CALCULATION OF STEAM COLUMN WELLHEAD PRESSURE (P_w)

C-1220
Revised 9-1-85

COMPANY Nates Petroleum Corp LEASE Lonejo RH State WELL NO. 2 DATE 5-7-82

LOCATION: Unit M Section 2 Township 7S Range 25E

L 3937 H 3937 L/H 1 G 0.660 % CO₂ 1.13 % N₂ 4.37 % H₂S 0

d 1.995 F_i 0.018231 GH 2598.4

P_{cr} 666 T_{cr} 365
TABLE IX & X

LINE	1 ST RATE		2 ND RATE		3 RD RATE		4 TH RATE		T _{cr}	TABLE IX & X
	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL		
1 Q _m	0.471	0.471	0.558	0.558	0.788	0.788	1.017	1.017		
2 T _w (W.H. °F)	534	534	534	534	537	537	537	537		
3 T _g (B.H. °F)	555	555	555	555	555	555	555	555		
4 T _g = (T _g + T _w) / 2	544.5	544.5	544.5	544.5	546	546	546	546		
5 T _g (°F)	0.873	0.863	0.867	0.865	0.868	0.878	0.882	0.888		
6 T _g	475.2	461.9	472.1	471.0	473.9	479.4	481.6	484.8		
7 GH/FE	5.466	5.530	5.504	5.517	5.483	5.420	5.396	5.359		
8 e ⁵ (Table XIV)	1.227	1.230	1.224	1.230	1.228	1.225	1.224	1.223		
9 1-e ⁵ (Table XIV)	0.125	0.127	0.186	0.157	0.196	0.184	0.183	0.182		
10 P _i	893.2	893.2	878.2	878.2	798.2	798.2	730.2	730.2		
11 P _i 2/1000	797.8	797.2	771.2	771.2	637.1	637.1	535.2	535.2		
12 F _i (Table XV)	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231		
13 F _o = F _i T _g	8.665	8.567	8.607	8.587	8.640	8.740	8.780	8.838		
14 F _o Q _m	4.087	4.085	4.803	4.711	6.868	6.827	8.929	8.929		
15 L/H (F _o Q _m) ²	16.657	16.291	23.065	22.074	46.350	47.43	79.73	80.80		
16 F _w = L/H (F _o Q _m) ² (1-e ⁻⁵)	3.09	3.04	4.29	4.29	8.62	8.73	14.54	14.70		
17 P _w ² = P _i ² + F _w	800.9	800.8	775.5	775.5	645.7	645.8	547.8	547.9		
18 P _g ² = e ⁵ P _w ²	482.7	485.0	453.1	453.9	792.9	791.1	670.5	670.1		
19 P _s	491.3	492.5	476.3	476.7	890.5	883.5	818.8	818.6		
20 P = (P _s + P _g) / 2	442.3	442.3	427.2	427.4	844.3	843.8	774.5	774.4		
21 P _i = (P/P _{cr})	1.4142	1.4151	1.3922	1.3925	1.2678	1.2670	1.1629	1.1628		
22 T _i = (T/T _{cr})	1.4916	1.4918	1.4918	1.4918	1.4959	1.4959	1.4959	1.4959		
23 Z (Table XI)	0.863	0.863	0.865	0.865	0.878	0.878	0.888	0.888		

YATES PETROLEUM CORPORATION

Conejo RH State #2

Unit M Sec 2, T.7S., R.25E.

$$Q_1 = 3,150$$

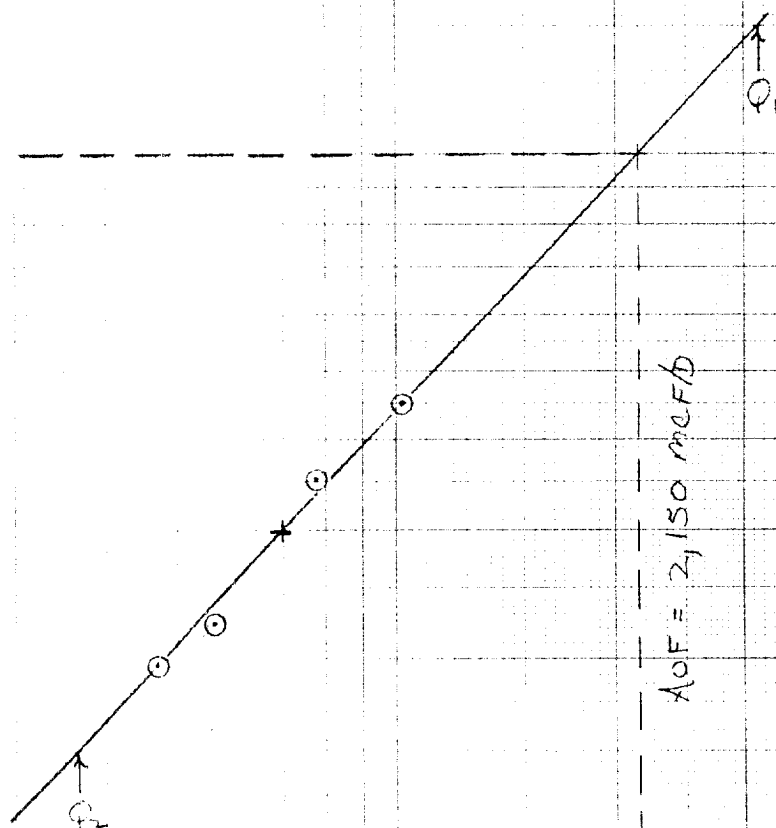
$$Q_2 = 365$$

$$\text{Log } Q_1 = 3.4983$$

$$\text{Log } Q_2 = 2.5623$$

$$n = 0.9360$$

$P_c^2 - P_w^2 \text{ (PSI} \times 1000\text{)}$



Q (MCF/D)