

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

RECEIVED C-132
d 9-1-65
0-132

JUN 01 1981

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 4-10-81		O. C. D.	
Company Yates Petroleum Corporation					Connection Transwestern Pipeline Co.		ARTESIA, OFFICE	
Pool Pecos Slope - Abo Gas					Formation Abo		Unit	
Completion Date 12-16-80		Total Depth 4315		Plug Back TD 4157		Elevation 3762 ft.		Farm or Lease Name Powers OL Federal
Casing Size 5 1/2"	Wt. 14#	d 5.012	Set At 5157	Perforations: From 3582 To 3910		Well No. 1		
Tubg. Size 2 7/8"	Wt. 6.5#	d 2.441	Set At 3878	Perforations: From To		Unit Sec. Twp. Rye. P 33 6S 25E		
Type Well - Single - Drivenhead - G.C. or G.O. Multiple Single					Packer Set At None		County Chaves	
Producing Thru Tubing		Reservoir Temp. °F 94 @ 3758		Mean Annual Temp. °F 62		Baro. Press. - P _g 13.2		State New Mexico
L 3758	H 3758	Cg .6493	% CO ₂ 0.51	% N ₂ 5.30	% H ₂ S N.1	Prever ----	Meter Run 2"	Taps Flanged

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prever 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							1005	39			Days
1.	2.067 X	1.000		460	15	60	976	69			22 Hrs.
2.	2.067 X	1.000		462	28	60	964	71			24 Hrs.
3.	2.067 X	1.000		465	55	60	942	72			24 Hrs.
4.	2.067 X	1.000		470	77	63	927	73			24 Hrs.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	4.946	84.25	473.2	1.000	1.242	1.043	527
2	4.946	115.35	475.2	1.000	1.242	1.043	721
3	4.946	162.18	478.2	1.000	1.242	1.043	1014
4	4.946	192.89	483.2	0.9971	1.242	1.043	1203
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
					2059.0	66.8	0.648	XXXXXX	662.5	359
1	0.714	520	1.448	.9192				.6493	P.S.I.A.	R
2	0.717	520	1.448	.9189					P.S.I.A.	R
3	0.722	520	1.448	.9183					P.S.I.A.	R
4	0.729	523	1.457	.9193					P.S.I.A.	R
5									P.S.I.A.	R

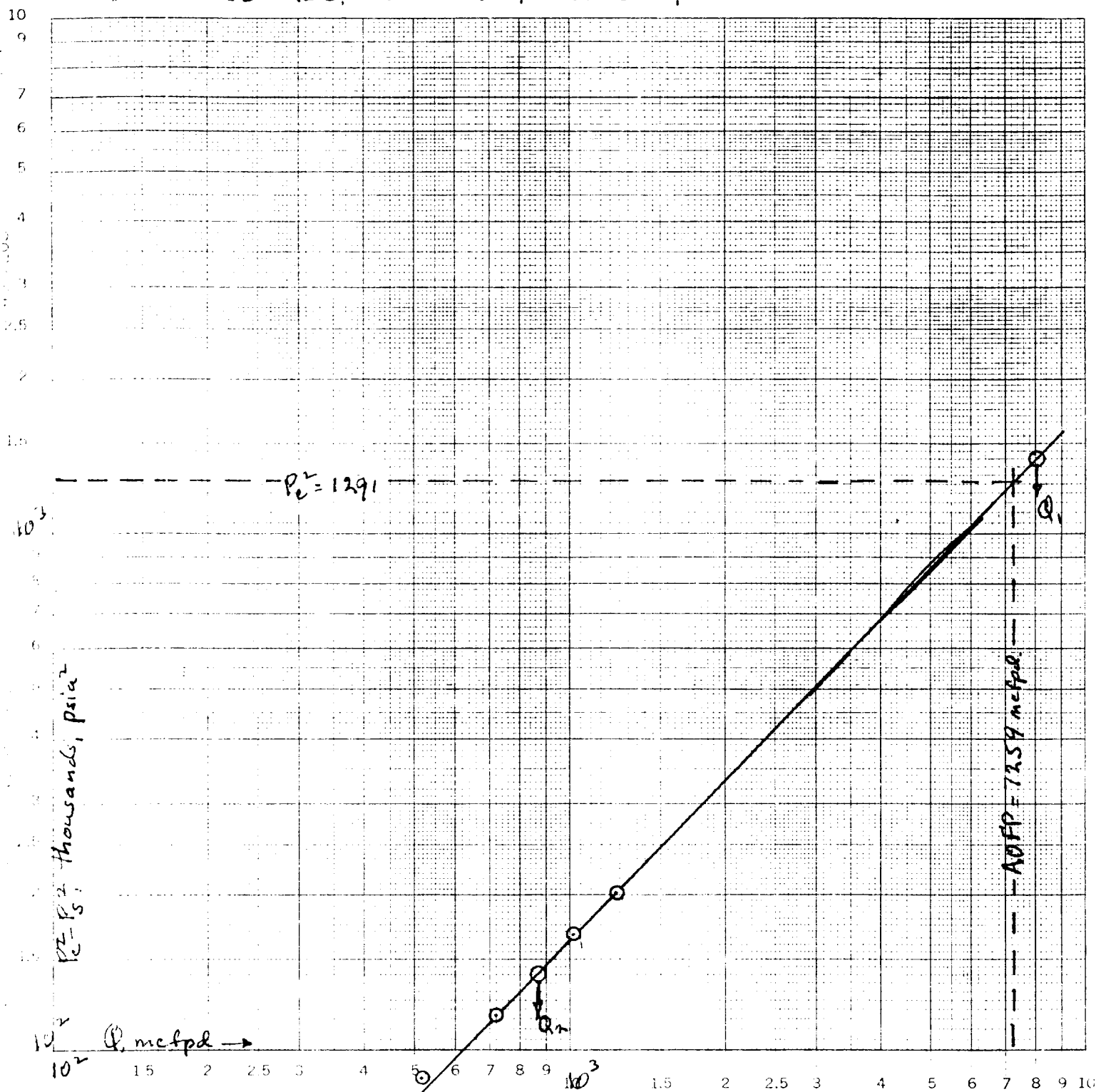
NO	P _i	P _w	R _i	R _w	(1) $\frac{P_c^2}{R_i^2 - R_w^2} =$	(2) $\left[\frac{R_i^2}{R_i^2 - R_w^2} \right]^n =$
1			1204	87	6.3911	6.034
2			1174	117		
3			1123	168		
4			1089	202		
5						

Absolute Open Flow		7259	Mcfd @ 15.025	Angle of Slope	45.9 deg.	Slope, n	0.9690
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Remarks:			
Approved By Commission:		Conducted By:	
		Eddie Mahfood	
Calculated By:		Checked By:	

4PC - Powers OL Federal No. 1

P-33-6S-2SE, Und. Abo, Chaves Co, N. Mex.



$$\begin{aligned}
 Q_1 &= 8025 \text{ mcfpd} & \log Q_1 &= 3.9045 \\
 Q_2 &= 862 \text{ mcfpd} & \log Q_2 &= 2.9355 \\
 n &= 0.9690
 \end{aligned}$$

WORKSHEET FOR CALCULATION OF SIC COLUMN WELLHEAD PRESSURE (P_w)

COMPANY VIC LEASE Porters of Portland WELL NO. 1 DATE 6-12-80

LOCATION: Unit P Section 33 Township 6 S Range 25 E

L 23.58 H 23.58 L/H 1.00 G 164.3 % CO₂ 0.57 % N₂ 5.30 % H₂S N/A

d 2.5070 F_r 0.09312 GH 24740 T_{cr} 75.5 P_{cr} 289% 1/2 P_{cr} 144.75

39206.475 2495.7

LINE	51	1	2	3	4				
1 G _m	—	0.537	0.721	1.014	1.263				
2 T ₁ (B.H. VR)	499	529	531	532	533				
3 T ₂ (B.H. VR)	554	554	554	553	553				
4 T ₃ = $\frac{(T_1 + T_2)}{2}$	526.5	541.5	542.5	542.5	543				
5 Z (B.H.)	7925	207	0.223	0.226	0.229				
6 T ₄	419.25	442.41	446.47	448.105	450.147				
7 GH T ₂	58678	55153	54650	54452	54204				
8 e _s (Table XIV)	1.2452	1.2298	1.22745	1.2265	1.2254				
9 P ₁ = e _s (Table XIV)		0.1265	0.1853	0.1247	0.1930				
10 P ₂	1018.2	989.2	957.2	955.2	946.2				
11 P ₃ = 1000	1036.7	978.52	954.49	912.41	883.98				
12 F ₁ (Table XIV)	0.21929	0.20622	0.20444	0.20419	0.20327				
13 F ₂ = F ₁ T ₂		4.0755	4.1130	4.1279	4.1468				
14 F ₃ Q _m		2.142	2.965	4.136	4.9220				
15 L/H (F ₃ Q _m) ²		4.613	8.794	17.52	24.89				
16 F _w = L/H (F ₃ Q _m) ² (1-e ^{-s})		0.36	1.63	3.24	4.55				
17 P _w ² = P ₁ ² + F _w		979.38	956.55	915.65	888.56				
18 P _s ² = e _s P _w ²	1290.4	1204.4	1174.1	1123.0	1088.84				
19 P _s	1136.2	1099.5	1083.6	1059.0	1043.5				
20 P = $\frac{P_1 + P_s}{2}$	1077.8	1043.3	1030.4	1007.5	991.8				
21 P _r = (P/P _{cr})	1.427	1.382	1.365	1.334	1.314				
22 T _r = (T/T _{cr})	1.338	1.376	1.379	1.379	1.380				
23 Z (Table XI)	1.7925	0.817	0.823	0.826	0.829				