

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

Form C-122
Revised 9-1-65

RECEIVED

C/SF
C-122

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 2-9-82		APR 6 1982	
Company Yates Petroleum Corporation				Connection Transwestern Pipeline Company				O. C. D. ARTESIA, OFFICE	
Pool Pecos Slope Abo				Formation Abo				Unit NM 29211	
Completion Date 11-24-81		Total Depth 5100'		Plug Back To 5057'		Elevation 3835' KB 3826.2' GR		Farm or Lease Name Engwall RL Federal	
Csg. Size 4-1/2"	Wt. 9.5#	d 4.090"	Set At 5078'	Perforations: From 4411 To 4751		Well No. 1			
Tub. Size 2-3/8"	Wt. 4.7#	d 1.995	Set At 4712	Perforations: From To		Unit Sec. Twp. Rge. P 4 9S 26E			
Type Well - Single - Provenhead - G.G. or G.O. Multiple Single						Packer Set At None		County Chaves	
Producing thru Tubing		Reservoir Temp. °F 98 @ 4751		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		State New Mexico	
L 4712	H 4712	G _g 0.651	% CO ₂ 0.63	% N ₂ 5.47	% H ₂ S 0	Prover ---	Meter Run 2"	Type 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							908				days
1.	2.067	x	0.875	390	5	58	754	60			24 hrs
2.	2.067	x	0.875	390	18	55	650	60			24 hrs
3.	2.067	x	0.875	390	32	60	509	62			24 hrs
4.	2.067	x	0.875	360	46	61	420	62			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, Mgd
1	3.729	44.90	403.2	1.002	1.239	1.038	216
2	3.729	84.19	403.2	1.005	1.239	1.038	411
3	3.729	113.59	403.2	1.000	1.239	1.037	543
4	3.729	131.02	373.2	0.999	1.239	1.034	625
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/cbl.
1	0.609	518	1.443	0.929	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2	0.609	515	1.435	0.929	Specific Gravity Separator Gas 0.651 X X X X X X X X
3	0.609	520	1.448	0.930	Specific Gravity Flowing Fluid X X X X X
4	0.564	521	1.451	0.936	Critical Pressure 662 P.S.I.A. _____ P.S.I.A.
5					Critical Temperature 359 R _____ R

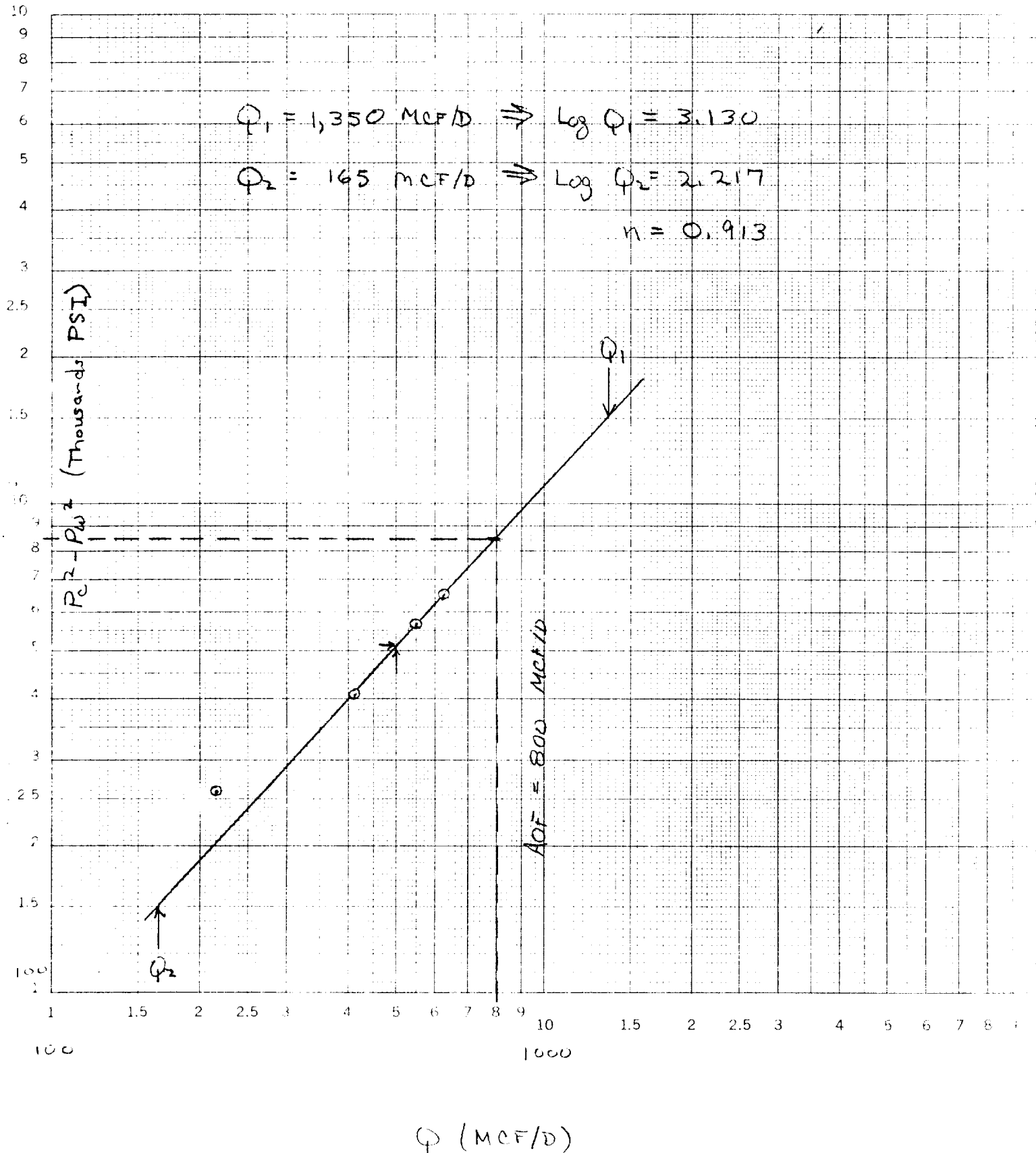
NO.	P _r	P _w	P _w ²	P _r ² - P _w ²	(1) $\frac{P_r^2}{P_r^2 - P_w^2} = 1.660$	(2) $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1.588$
1	588.6		589.4	259.2	ACF = Q $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 800$	
2	439.8		442.6	406.0		
3	272.7		277.7	570.9		
4	187.7		194.4	654.2		
5						

Absolute Open Flow 800 Mgd @ 15.925		Angle of Slope 0.913	
-------------------------------------	--	----------------------	--

Remarks: Static pressures by Bennett Wireline, flowing pressures by DWT calculations.	
Worksheet C-122D attached.	

Approved By Consultant:	Conducted By: David Weaver	Calculated By: Albert R. Stall	Checked By:
-------------------------	-------------------------------	-----------------------------------	-------------

Yates Petroleum Corporation
 Engwall RL Federal #1
 Unit P, Sec 4, T9S, R26E



WORKSHEET FOR CALCULATION OF ST. C COLUMN WELLHEAD PRESSURE (P_w)

AS-101-165
C-122D
Revised 9-1-65

COMPANY Yates Pet. Corp. LEASE Engwall RL Fed #1 WELL NO. 1 DATE 4-3-82

LOCATION: Unit P Section 9 Township 9S Range 26E

4712 4712 1 0 0.651 % CO₂ 0.63 % H₂S 0

1.915' F_i 0.018231 GR 3067.5 P_{st} 66.2 T_{cr} 359
1ST RATE 2ND RATE 3RD RATE 4TH RATE TABLE B.1

LINE	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	0.216	0.216	0.411	0.411	0.543	0.543	0.625	0.625
2	520	520	520	520	522	522	522	522
3	558	558	558	558	558	558	558	558
4	539	539	539	539	540	540	540	540
5	0.925	0.882	0.900	0.895	0.925	0.917	0.925	0.930
6	498.6	475.4	485.1	482.4	499.5	495	499.5	502.2
7	6.153	6.452	6.323	6.359	6.141	6.195	6.141	6.108
8	1.260	1.274	1.268	1.269	1.251	1.262	1.259	1.257
9	0.206	0.215	0.211	0.212	0.206	0.208	0.206	0.204
10	767.2	767.2	663.2	663.2	522.2	522.2	433.2	437.2
11	588.6	588.6	439.8	439.8	272.7	272.7	187.7	187.7
12	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231
13	9.090	8.667	8.844	8.795	9.106	9.024	9.106	9.156
14	1.9634	1.8721	3.635	3.615	4.945	4.900	5.691	5.722
15	3.855	3.5047	13.212	13.065	24.451	24.012	32.390	32.74
16	0.794	0.754	2.788	2.770	5.037	4.995	6.672	6.680
17	589.4	589.4	442.6	442.6	277.7	277.7	194.4	194.4
18	742.6	742.6	561.2	561.6	349.7	350.5	244.7	244.3
19	861.8	861.8	749.1	749.4	591.3	592.0	494.7	494.5
20	814.5	814.5	706.2	706.3	556.8	557.1	463.9	463.8
21	1.2303	1.2303	1.0667	1.0669	0.8410	0.842	0.7008	0.7005
22	1.5014	1.5014	1.2014	1.2014	1.0043	1.0043	1.0043	1.0043