NEW MEXICO OIL CONSERVATION COMMSS.

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 10/20/73	
Company: Atlantic Richfield Company			Connection: None		
Pool: Drinkard			Formation: Drinkard		Unit:
Completion Date: 10/12/73	Total Depth: 7835		Plug Back TD: 7240	Elevation: 3450 G	Farm or Lease Name: R. L. Brunson
Csg. Size: 5 1/2 / Wt.: 17.0 / d: 4.892 / Set At: 7825			Perforations: From 6350 To 6492		Well No.: 5
Tbg. Size: 2 3/8 / Wt.: 4.7 / d: 1.995 / Set At: 6315			Perforations: From To		Unit: J / Sec.: 4 / Twp.: 22S / Rge.: 37E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 6315		County: Lea
Producing Thru: Tubing	Reservoir Temp. °F: 110 @ 6300	Mean Annual Temp. °F: 60°	Baro. Press. – P_a: 13.2		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
6315	6315	.742	–	–	–		X	Flange

	FLOW DATA						TUBING DATA		CASING 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							1285		Pkr		72
1.	3	x	2	450	27	73	555	76			1
2.	3	x	2	450	24	72	652	76			1
3.	3	x	2	450	21	72	752	76			1
4.	3	x	2	450	15	72	872	76			1
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	21.32	111.83	463.2	.9877	1.161	1.059	2895
2.	21.32	105.44	463.2	.9887	1.161	1.061	2738
3.	21.32	98.63	463.2	.9887	1.161	1.061	2561
4.	21.32	83.35	463.2	.9887	1.161	1.061	2164
5.							

NO.	P_t	Temp. °R	T_f	Z
1.	0.69	533	1.32	.892
2.	0.69	532	1.31	.889
3.	0.69	532	1.31	.889
4.	0.69	532	1.31	.889
5.				

Gas Liquid Hydrocarbon Ratio 125.54 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 58.0 Deg.
Specific Gravity Separator Gas .742 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX .765
Critical Pressure 667 P.S.I.A. 667 P.S.I.A.
Critical Temperature 405 R 411 R

P_c 1298.2 P_c^2 1685.3

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1			518.7	1166.6
2			613.4	1071.8
3			730.8	954.5
4			883.8	801.5
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.445$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.322$

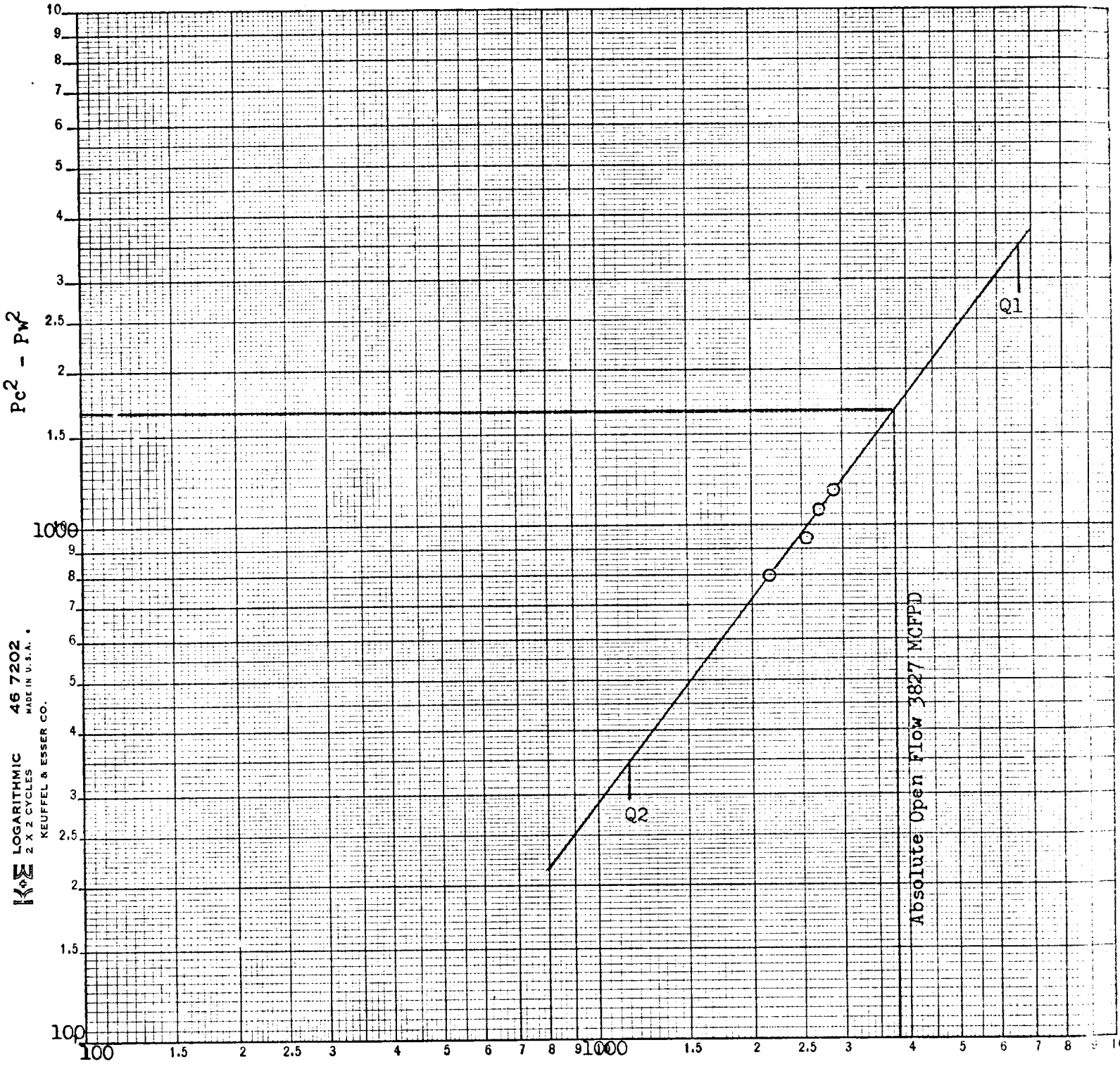
AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3827$

Absolute Open Flow 3827 Mcfd @ 15.025 Angle of Slope θ 52° 48' Slope, n .759

Remarks:

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Ralph B. Erwin	Thomas Miller	L. C. Hudry

lantic Richfield Company
R. L. Brunson No. 1
Unit J, Sec. 4, T22S, R37E
Lea County, New Mexico
October 20, 1973



Log Q1 = 3.819544
Log Q2 = 3.060698
n = 0.758846

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-65

COMPANY Atlantic Richfield Company LEASE R. L. Brunson WELL NO. 5 DATE 10/20/73

LOCATION: Unit J Section 4 Township 22 S Range 37 E

L 6315 H 6315 L/H 1.000 G .765 % CO_2 — % N_2 — % H_2S —

d 1.995 F_r .018231 GH 4831 P_{cr} 667 (TABLE IX & X) T_{cr} 411 (TABLE IX & X)

	1st Rate		2nd Rate		3rd Rate		4th Rate			
LINE	1st trial	2nd trial	1st trial	2nd trial	1st trial	2nd trial	1st trial	2nd trial		
1 Q_m	2.895	2.895	2.738	2.738	2.561	2.561	2.164	2.164		
2 T_w (W.H. °R)	536	536	536	536	536	536	536	536		
3 T_s (B.H. °R)	570	570	570	570	570	570	570	570		
4 $T = (\frac{T_w + T_s}{2})$	553	553	553	553	553	553	553	553		
5 Z (Est.)	.827	.845	.825	.828	.805	.809	.780	.787		
6 TZ	457.3	467.3	456.2	457.9	445.2	447.4	431.3	435.2		
7 GH/TZ	10.564	10.338	10.590	10.550	10.851	10.800	11.201	11.101		
8 e^s (Table XIV)	1.486	1.474	1.488	1.485	1.502	1.499	1.522	1.516		
9 $1-e^{-s}$ (Table XIV)	0.327	0.322	0.328	0.327	0.334	0.333	0.343	0.340		
10 P_t	568.2	568.2	665.2	665.2	765.2	765.2	885.2	885.2		
11 $P_t^2/1000$	322.9	322.9	442.5	442.5	585.5	585.5	783.6	783.6		
12 F_I (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231		
13 $F_C = F_r TZ$	8.335	8.519	8.317	8.348	8.116	8.156	7.863	7.934		
14 $F_c Q_m$	24.13	24.66	22.77	22.86	20.79	20.89	17.02	17.17		
15 $L/H (F_c Q_m)^2$	582.3	608.1	518.5	522.6	432.2	436.4	289.7	294.8		
16 $F_w = L/H (F_c Q_m)^2 (1-e^{-s})$	190.40	195.8	170.1	170.9	144.4	145.32	99.36	100.24		
17 $P_w^2 = P_t^2 + F_w$	513.3	518.7	612.6	613.4	729.9	730.8	883.0	883.8		
18 $P_s^2 = e^s P_w^2$	762.8	764.6	911.5	910.9	1096.3	1095.5	1343.9	1339.9		
19 P_s	873.4	874.4	954.7	954.4	1047.0	1046.7	1159.3	1157.5		
20 $P = (\frac{P_t + P_s}{2})$	720.8	721.3	810.0	809.8	906.1	905.9	1022.2	1021.4		
21 $P_r = (P/P_{cr})$	1.08	1.08	1.21	1.21	1.36	1.36	1.53	1.53		
22 $T_r = (T/T_{cr})$	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35		
23 Z (Table XI)	0.845	0.845	0.828	0.828	0.809	0.809	0.787	0.787		

One copy to be filed in District Office (Work copy acceptable)