

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special		Test Date 7/16/84	
Company HNG Oil Company		Connection Trans Western	
Foot Pitch Fork Ranch		Formation Morrow	
Completion Date 2/7/84		Total Depth 15250'	Plug Back TD 15205'
		Elevation 3476'GL	Farm or Lease Name Pitch Fork Ranch 28 Federal Com
Csg. Size 4 1/2" * *	Wt. 15.10	d 3.701	Set At 12640' T 15250' B
Perforations: From 14793' To 14883'	Well No. 1		
Trq. Size 2 7/8"	Wt. 6.5	d 2.441	Set At 12640'
Perforations: Open Ended		Unit Sec. Twp. Hgt. G 28 24s 34e	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single		Packer Set At 12684'	County Lea
Producing Thru Tubing	Reservoir Temp. *F -	Mean Annual Temp. *F 60	Baro. Press. - P _a 13.2
State New Mexico			
L 14890	H -	G _g 0.5777	% CO ₂ 0.623
		% N ₂ 0.181	% H ₂ S -
Prover 4.026		Meter Run 4.026	Taps F

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. DWT	Temp. *F	Press. p.s.i.g.	Temp. *F	Duration of Flow
SI							6200	62	PACKER		24.0 hr
1.	4.026		1.750	900	5	81	5850	62			1.0 hr
2.	4.026		1.750	900	10	82	5680	62			1.0 hr
3.	4.026		1.750	900	21	76	5376	62			1.0 hr
4.	4.026		1.750	900	40	77	4930	62			1.0 hr
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 _{pv}	Rate of Flow Q, Mcd
1	14.93	67.57	913.2	0.9804	1.316	1.031	1341.94
2	14.93	95.56	913.2	0.9795	1.316	1.031	1896.07
3	14.93	138.48	913.2	0.9850	1.316	1.033	2768.47
4	14.93	191.12	913.2	0.9840	1.316	1.033	3816.96
5							

NO.	R _f	Temp. *R	T _f	Z	Gas Liquid Hydrocarbon Ratio	Dry Gas	Mcf/bbl.
1	0.74	541	1.58	0.940			
2	0.74	542	1.58	0.940			
3	0.74	536	1.56	0.938			
4	0.74	537	1.57	0.938			
5							

NO.	P ₁ ²	P _w ²	P _w ²	P _c ² - P _w ²
1	7540.2	56854.6	5795.8	
2	7398.2	54733.4	7917.0	
3	7048.2	49677.1	12973.3	
4	6563.2	43075.6	19574.8	
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 7.913$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4.837$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 9171.3$

Absolute Open Flow 9171 Mcfd @ 15.025 Angle of Slope @ 52° 41' Slope, n 0.762

Remarks: * BOTTOM HOLE PRESSURE @ (-11414) 14890' used for pressure calculations
** LINER

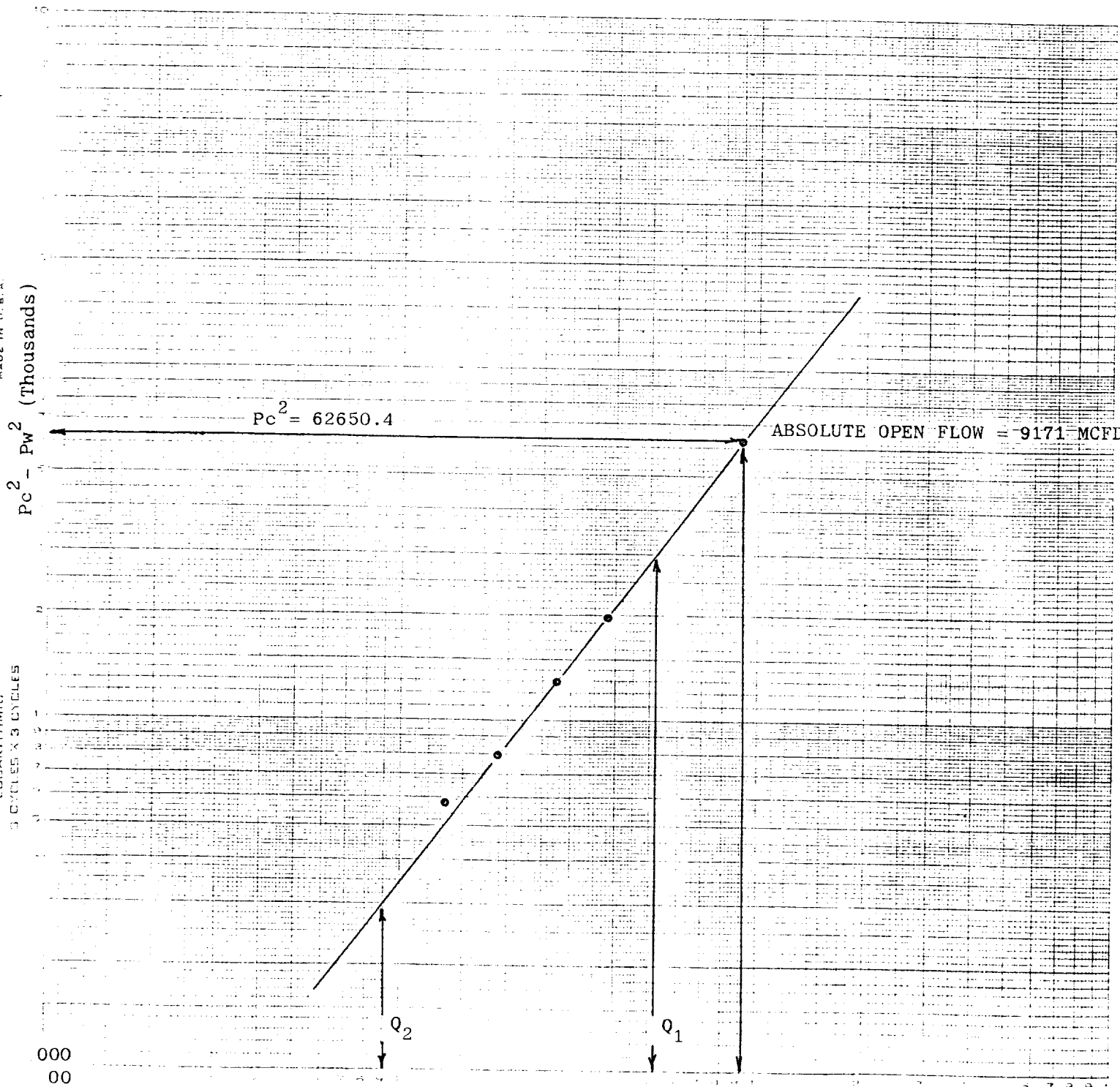
Approved By Division _____ Conducted By: Duke Services, Inc. Calculated By: Joe A. Coleman Checked By: PE #2208 Joe A. Coleman

JAN 23 1987

Bitter Nelson - HNG Oil Company

COMPANY: HNG Oil Company
 WELL: Pitch Fork Ranch Federal Com, No. 1
 LOCATION: G 28 24s 34e
 COUNTY: Lea
 DATE: July 16, 1984

LOGARITHMIC
 3 CYCLES X 3 CYCLES
 DIETZGEN GRAITH PAPER
 MADE IN U.S.A.



Q-MCFD

$Q_1 = 5200 \text{ MCFD}; \text{ Log } Q_1 = 3.71600$

$Q_2 = 900 \text{ MCFD}; \text{ Log } Q_2 = \frac{2.95424}{N = 0.76176} = 0.762$

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