

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Midland Formation Penn. Morrow County Wichita
Initial corrected Annual Special Date of Test 11-13-64
Company Harvey E. Yates Lease Indo Singer Well No. 1
Unit P Sec. 4 Twp. 20S Rge. 27E Purchaser
Casing 54 Wt. 17 I.D. 4.02 Set at 10,302 Perf. open hole To 1,177
Tubing 2 Wt. 4.7 I.D. 1.995 Set at 10,085 Perf. open end To
Gas Pay: From 1,300 To 10,407 L 10,085 K .844 -GL Bar. press .2
Producing Thru: Casing Tubing 1 Type Well Dual
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: 11-13-64 Packer Reservoir Temp. 17

OBSERVED DATA

Tested Through: (Prover) (Choke) (Meter) Type Taps 1

No.	Flow Data					Tubing Data		Casing Data		Solution Flow
	(Prover) (Line, Size)	(Choke) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI	2					2,700		Packer		
1.	2		200	11	71	2,700				
2.	3	.750	210	13	72	2,700				
3.	2	.500	223	25	68	2,700				
4.	2	.500	30	33	6	2,700				
5.										

FLOW CALCULATIONS

No.	Coefficient (1/2-Hour)	$\sqrt{h_w p_f}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate Q-MCFPD @ 15.025 °F	SW % @ 15.025 °F
1.	3,140	43.411	213.2	.9866	.9728	1.016	1	
2.	3,140	51.732	223.2	.9867	.9728	1.016	1	
3.	3,140	75.110	236.2	.9824	.9728	1.019	350	
4.	3,140	100.213	317.2	.9824	.9728	1.027	350	
5.								

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 69,000 cf/bbl.
Gravity of Liquid Hydrocarbons 54 deg.
P_c 2,933.2 (1-e^{-s}) .361
Specific Gravity Vapor Gas
Specific Gravity Flow
P_c 2,933.2 P_c 2,933.2

No.	P _w P _t (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ^{-s})	P _w ²	P _c ² -P _w ²	Cal. P _w
1.	2000.0	7200	1.51	2.59	.934	7504	1880	2030.1
2.	2100.0	2100	1.99	3.96	1.420	2104	1200	2035.3
3.	2230.0	5711	2.52	6.65	2.400	5720	3170	2031.0
4.	300.0	4662	3.47	12.04	4.346	4666	4233	2030.0
5.								

Absolute Potential: 575 MCFPD; n .669COMPANY Harvey E. YatesADDRESS 204 Corner Building, Artesia, New MexicoAGENT and TITLE Marshall B. MorrisWITNESSES James D. MonroeCOMPANY Harvey E. Yates

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