

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Ballard Formation Pictured Cliffs County Mo ArribaInitial X Annual _____ Special _____ Date of Test 9-1-65Company Continental Oil Company Lease AXI Apache "A" Well No. 9Unit A Sec. 10 Twp. 23N Rge. 5W Purchaser Southern Union Gas CompanyCasing 4 1/2" Wt. 9.5# I.D. 4.090" Set at 2350' Perf. 2254' To 2289'Tubing 2 3/8" Wt. 4.7# I.D. 1.995" Set at Reported Perf. _____ To _____Gas Pay: From 2254' To 2289' L _____ xG .670 -GL _____ Bar.Press. 12 PSIAProducing Thru: Casing X Tubing _____ Type Well SingleDate of Completion: 8-29-65 Packer _____ Reservoir Temp. _____Tested Through (Prover) (Choke) Type Taps _____

No.	Flow Data			Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) Size	(Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	
SI						587	587	SI HOURS
1.	2"	1/8	578		64	578	64	1 HR
2.	2"	1/4	545		60	547	60	1 HR
3.	2"	7/16	440		61	450	61	1 HR
4.	2"	5/8	284		63	332	63	1 HR
5.								

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	.3418		590	0.9962	0.9463	1.064	202
2.	1.4030		557	1.0000	0.9463	1.061	785
3.	4.3997		452	0.9990	0.9463	1.051	1976
4.	8.3555		296	0.9971	0.9463	1.031	2406
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.
Gravity of Liquid Hydrocarbons _____ deg.
F_c P_w Measured (1-e^{-S})Specific Gravity Separator Gas _____
Specific Gravity Flowing Fluid .670
P_c 599 P_c² 358,801

No.	P _w	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	P _w /P _c
1.	590					348,100	10,701		98.5
2.	559					312,481	46,320		93.3
3.	462					213,444	145,357		77.1
4.	344					118,336	240,465		57.4
5.									

Absolute Potential: 3700 MCFPD; n .81COMPANY Continental Oil CompanyADDRESS P. O. Box 1621, Durango, ColoradoAGENT and TITLE E. B. Errett, District Test EngineerWITNESSED Frank Van Matre

COMPANY _____

REMARKS

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

- Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w).
MCF/da. @ 15.025 psia and 60° F.
- P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.
psia
- P_w = Static wellhead working pressure as determined at the end of flow period.
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia
- P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if
flowing through casing.) psia
- P_f = Meter pressure, psia.
- h_w = Differential meter pressure, inches water.
- F_g = Gravity correction factor.
- F_t = Flowing temperature correction factor.
- F_{pv} = Supercompressability factor.
- n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t .

Q - MCFD - 15,025 PSIA