

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Barnett Formation Queen County Lea
Initial _____ Annual _____ Special X Date of Test 8-24-56
Company Phillips Petroleum Lease Barn #4 Well No. 1
Unit P Sec. 14 Twp. 19S Rge. 36E Purchaser Barnett Basin Pipeline
Casing 5-1/2" Wt. 14 I.D. 5.012" Set at 3999' Perf. 3740 To 3970
Tubing 2-3/8" Wt. 4.75 I.D. 1.995 Set at 3975' Perf. 3843' To 3940'
Gas Pay: From 3600' To 3974 L 3843 xG 0.685 -GL 2632' Bar.Press. 13.2
Producing Thru: Casing _____ Tubing X Type Well single
Date of Completion: 6-8-53 Packer 3498 Single-Bradenhead-G. G. or G.O. Dual
Reservoir Temp. _____

 CO_2 - 4.06% H_2 - 2.37%

OBSERVED DATA

Tested Through (Barnett) (Choke) (Meter) Type Taps flange

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. $^{\circ}F$.	Press. psig	Temp. $^{\circ}F$.	Press. psig	Temp. $^{\circ}F$.	
SI						873.2				72-1/4
1.	4"	1.75"	459.2	7.4	74	845.3				24
2.	4"	1.75	459.3	13.6	64	781.0				24
3.	4"	1.75	456.9	22.8	69	668.9				23-3/4
4.	4"	1.75	452.3	41.3	74	508.9				24-1/4
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.	21.69	59.13		0.9868	0.9359	1.041	1233
2.	21.69	80.36		0.9962		1.045	1694
3.	21.69	103.50		0.9915	"	1.043	2173
4.	21.69	138.50		0.9868	"	1.041	2888
5.							

PRESSURE CALCULATIONS

as Liquid Hydrocarbon Ratio 155,300 cf/bbl.
Gravity of Liquid Hydrocarbons _____ deg.
9.936 ($1-e^{-s}$) 0.166

Specific Gravity Separator Gas _____
Specific Gravity Flowing Fluid 0.685
 P_c 886.4 P_c^2 785.7

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	$\frac{P_w}{F_c}$
1.	858.5	737.0	12.25	150.1	24.92	761.9	23.8	872.9	.98
2.	794.2	630.8	16.33	263.2	47.01	664.8	107.9	823.3	.93
3.	702.1	492.9	28.59	466.1	77.37	570.3	215.4	755.2	.85
4.	522.1	272.6	28.70	823.7	136.70	409.3	376.4	639.8	.72
5.									

Absolute Potential: 7.084 MCFPD; n 0.50 limited
COMPANY Phillips Petroleum Co.
ADDRESS Box 2105, Hobbs, N.M.
AGENT and TITLE W. A. Roberts, District Production Supt.
WITNESSED None
COMPANY _____

REMARKS

Retest

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} = Supercompressibility 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 .

