NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE OCC

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

1958 SEP 30 PM 2 51

Pool Wildcat Formation San Andres County Lea

Initial ____ Annual ____ Special X Date of Test 9-18-58

Company Lone Star Producing Company Lease State-King Well No. 1

Unit M Sec. 16 Twp. 9-S Rge. 35-E Purchaser None

Casing ____ Wt. ____ I.D. ____ Set at 4815 Perf. 4740 To 4815

Tubing 2.375 Wt. 4.70 I.D. 1.995 Set at 4736 Perf. 4920 To 4924 4802

Gas Pay: From 4740 To 4815 L 4740 xG 0.9724 -GL 4609 Bar.Press. 13.2

Producing Thru: Casing ____ Tubing X Type Well Single

Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: Nov. 18, 1952 Packer 4736 Reservoir Temp. 122° F

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps Flange

No.	Flow Data (Prover) (Line) Size	Flow Data (Choke) (Orifice) Size	Flow Data Press. psig	Flow Data Diff. h_w	Flow Data Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						1433		Packer	-	
1.	3.000	2.000	50	54	67	522	71	Packer	-	24
2.	3.000	2.000	43	37	63	600	71	Packer	-	3
3.	3.000	2.000	43	32	66	629	70	Packer	-	3
4.	3.000	2.000	43	27	59	728	60	Packer	-	3
5.	3.000	2.000	44	18	60	800	60	Packer	-	3

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.	27.52	58.42	63.2	0.9933	0.8715	1.085 1.084	1391
2.	27.52	46.00	57.2 56.7	0.9971	0.8715	1.090 1.090	1100
3.	27.52	42.78	57.2 56.7	0.9943	0.8715	1.090 1.085	1080
4.	27.52	39.30	57.2 56.7	1.0010	0.8715	1.090 1.125	943 43.1
5.	27.52	32.37	58.2 57.7	1.0000	0.8715	1.090 1.139	776

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 21,900 cf/bbl. Specific Gravity Separator Gas 0.791

Gravity of Liquid Hydrocarbons 26 deg. Specific Gravity Flowing Fluid 1.102

P_c 0.9936 $(1-e^{-s})$ 0.272 P_c 1446.2 P_c^2 2091.5

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$(F_cQ)^2$ $(1-e^{-s})$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	535.2	286.439	1.3820	1.9099	0.52	287	1805	535.3	0.629
2.	613.2	376.014	1.0929	1.1944	0.32	376	1716	613.2	0.576
3.	642.2	412.420	1.0134	1.0269	0.28	412	1680	642.2	0.556
4.	741.2	549.377	0.9369	0.8777	0.24	549	1543	741.2	0.487
5.	813.2	661.294	0.5944	0.5944	0.16	661	1431	813.2	0.438

Absolute Potential: 1650 MCFPD; n 1.000

COMPANY Lone Star Producing Company

ADDRESS Route 1, Box 45, Midland, Texas

AGENT and TITLE Kent Westbrook, Prod. Engr.

WITNESSED ____

COMPANY ____

REMARKS

The actual curve slope is greater than 1.000 so the 45° curve with slope equal to 1.000 was used. This actual flatness is due to excessive fluid being produced.

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.