NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Jalmat Formation Yates - 7 Rivers County Lea

Initial ____ Annual ____ Special X Date of Test ~~6-24-57 to~~ 6-26-57

Company Cities Service Oil Company Lease Thomas Well No. 1

Unit O Sec. 19 Twp. 24 Rge. 37 Purchaser El Paso Natural Gas Co.

Casing 5-1/2 Wt. 14 I.D. ____ Set at 3351 Perf. ____ To ____

Tubing 2-3/8 Wt. 4.7 I.D. ____ Set at 3434 Perf. ____ To ____

Gas Pay: From 3025 To 3346 L 3434 xG .655 -GL 2249 Bar.Press. 13.2

Producing Thru: Casing ____ Tubing X Type Well Single

Date of Completion: 10-4-50 Packer ____ Single-Bradenhead-G. G. or G.O. Dual Reservoir Temp. ____

OBSERVED DATA

Tested Through ~~(Prover)~~ ~~(Choke)~~ (Meter) Type Taps ____

No.	Flow Data ~~(Prover)~~ (Line) Size	~~(Choke)~~ (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						476				72
1.	4"	1.500	217	16.00	78	329				24
2.	4"	1.500	220	21.16	76	300				24
3.	4"	1.500	233	23.52	78	280				24
4.	4"	1.500	235	28.62	78	253				24
5.	2nd Test Slope greater than 1.000, slope of 1.000 was drawn through point representing highest rate of flow. Good point alignment, spread & pull down.									

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.	13.99	60.66		.9831	.9571	1.020	815
2.	13.99	70.21		.9850	.9571	1.021	945
3.	13.99	76.07		.9831	.9571	1.022	1,023
4.	13.99	84.25		.9831	.9571	1.022	1,133
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio ____ cf/bbl. Specific Gravity Separator Gas ____

Gravity of Liquid Hydrocarbons ____ deg. Specific Gravity Flowing Fluid ____

F_c 9.936 $(1-e^{-s})$ .143 P_c 489.2 P_c^2 239.3

No.	P_w / P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	342.2	117.1	8.10	65.61	9.38	126.5	112.8		
2.	313.2	98.1	9.39	88.17	12.61	110.7	128.6		
3.	293.2	86.0	10.16	103.23	14.76	100.8	138.5		
4.	266.2	70.9	11.26	126.79	18.13	89.0	150.3		
5.									

Absolute Potential: 1,800 MCFPD; n 1.000

COMPANY Cities Service Oil Company

ADDRESS Box 97, Hobbs, New Mexico

AGENT and TITLE E. H. Furney, Jr. Petroleum Engineer

WITNESSED E. G. Smith

COMPANY El Paso Natural Gas 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.

Thomas No. 1
-19- -37 Lea County, New Mexico