NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Eumont Formation Queen County Lea

Initial X Annual Special Date of Test 4-3 - 4-12-57

Company Gulf Oil Corporation Lease Matthews Well No. 2

Unit J Sec. 6 Twp. 20S Rge. 37E Purchaser Permian Basin P. L. Co.

Casing 5.5 Wt. 17 I.D. 4.892 Set at 3629 Perf. 3180 To 3280

Tubing 2.375 Wt. 4.7 I.D. 1.995 Set at 3291 Perf. To

Gas Pay: From 3180 To 3280 L 3291 xG .665 -GL 2189 Bar.Press. 13.2

Producing Thru: Casing X Tubing Type Well Single

Date of Completion: 7-23-56 Packer None Single-Bradenhead-G. G. or G.O. Dual Reservoir Temp.

OBSERVED DATA

Tested Through [illegible] (Meter) Type Taps Pipe

No.	Flow Data (Prover) (Choke) (Line) Size	(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						955.2		961.5		73
1.	4	2.00	434.0	3.8	79	915.1		911.0		22
2.	4	2.00	424.2	9.5	76	883.5		872.7		24
3.	4	2.00	426.0	18.0	46	835.8		816.5		24
4.	4	2.00	430.8	34.8	66	769.2		748.7		24
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.	29.92	41.22	447.2	.9822	.9498	1.039	1195
2.	29.92	64.46	437.4	.9850	.9498	1.037	1871
3.	29.92	88.92	439.2	1.0137	.9498	1.048	2685
4.	29.92	122.9	434.0	.9943	.9498	1.040	3612
5.							

PRESSURE CALCULATIONS

CO2 - 3.09%
N2 - 1.32%

Gas Liquid Hydrocarbon Ratio cf/bbl.
Gravity of Liquid Hydrocarbons deg.
F_c 1.812 Measured $(1-e^{-s})$ .140

Specific Gravity Separator Gas
Specific Gravity Flowing Fluid
P_c 974.7 P_c^2 950.0

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.	928.3					861.7	88.3		.95
2.	896.7					804.1	145.9		.92
3.	849.0					720.8	229.2		.87
4.	782.4					612.1	337.9		.80
5.									

Absolute Potential: 8100 MCFPD; n 0.78

COMPANY Gulf Oil Corporation
ADDRESS Hobbs, New Mexico
AGENT and TITLE R. L. Smith
WITNESSED R. L. West
COMPANY Permian Basin P. L. Co.

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.