NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Langlie Mattix Formation 7 Rivers - Queen County Lea

Initial ____ Annual ____ Special X Date of Test 4-15 to 4-19-57

Company Western Natural Gas Company Lease Harrison Well No. 2

Unit D Sec. 29 Twp. 24 Rge. 37 Purchaser El Paso Natural Gas Company

Casing 7" Wt. 24 I.D. 6.336 Set at 3356 Perf. ____ To ____

Tubing 2-7/8 Wt. 6.5 I.D. 2.441 Set at 3645 Perf. ____ To ____

Gas Pay: From 3360 To 3645 L 3645 xG .660 -GL 2406 Bar.Press. 13.2

Producing Thru: Casing ____ Tubing X Type Well Single
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 2-18-37 Packer None Reservoir Temp. ____

OBSERVED DATA

Tested Through ~~(Orifice)~~ ~~(Choke)~~ (Meter) Type Taps Flange

	Flow Data					Tubing Data		Casing Data		
No.	~~(Prover)~~ (Line) Size	~~(Choke)~~ (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	Duration of Flow Hr.
SI						220				72
1.	4	1.500	174	24.01	61	184				24
2.	4	1.500	160	34.81	66	167				24
3.	4	1.500	142	50.41	58	147				24
4.	4	1.500	124	68.89	66	130				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.	13.99	67.01		0.9990	.9535	1.018	909
2.	13.99	77.60		0.9943	.9535	1.017	1.047
3.	13.99	88.40		1.0019	.9535	1.015	1.199
4.	13.99	97.15		0.9943	.9535	1.013	1.305
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio ____ cf/bbl. Specific Gravity Separator Gas ____
Gravity of Liquid Hydrocarbons ____ deg. Specific Gravity Flowing Fluid ____
P_c 5.866 $(1-e^{-s})$ 0.153 P_c 233.2 P_c^2 543.8

No.	~~P~~ 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.	~~197.2~~	388.9	5.332	28.43	4.35	393.3	150.5	626.8	269
2.	~~180.2~~	324.7	6.142	37.72	5.77	330.5	213.3	575.0	247
3.	160.2	256.6	7.033	49.46	7.57	264.2	279.6	513.6	220
4.	143.2	205.1	7.655	58.60	8.97	214.1	329.7	462.9	198
5.									

Absolute Potential: 1,680 MCFPD; n 0.533
COMPANY Western Natural Gas Company
ADDRESS 823 Midland Tower, Midland, Texas
AGENT and TITLE C. M. Bayes Petroleum Engineer
WITNESSED H. H. Kerby
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.