

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Grady Formation Devonian County Red
Initial Annual Special X Date of Test May 2/4, 1958
Company El Paso Natural Gas Company Lease Gregory Federal Well No. 4
Unit X Sec. 30 Twp. 25 Rge. 37 Purchaser El Paso Natural Gas Company
Casing 5 1/2 Wt. 27 I.D. 4.092 Set at 8460 Perf. 8316 To 8372
Tubing 2 1/2 Wt. 6.5 I.D. 2.441 Set at 8359 Perf. 8316 To 8372
Gas Pay: From 8316 To 8372 L 8359 xG .405 -GL 13.2 Bar.Press. 13.2
Producing Thru: Casing 8316 Tubing X Type Well Single
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: 1-19-1958 Packer None Reservoir Temp. 13.2

OBSERVED DATA

Tested Through (Pressure) (Shake) (Meter) Type Taps Fig.

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Brown) (Line) Size	(Shake) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						2546		2551		72
1.	6	2.500	561	1.96	65	2112		2376		24
2.	6	2.500	542	5.29	54	1865		2099		24
3.	6	2.500	537	10.24	62	1442		1711		24
4.	6	2.500	528	16.81	65	894		1232		24
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour) <u>Fig.</u>	$\sqrt{h_w P_f}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	39.13	34.12		.9952	.9771	1.053	1,360
2.	39.13	54.18		1.0024	.9771	1.057	2,181
3.	39.13	75.05		.9981	.9771	1.053	3,000
4.	39.13	95.36		.9952	.9771	1.050	3,798
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 14.1 cf/bbl.
Gravity of Liquid Hydrocarbons deg.
F_c Measured (1-e^{-s})
Specific Gravity Separator Gas
Specific Gravity Flowing Fluid
P_c 2564.2 P_c 6575.1

No.	P _w P ₄₄ (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	P _w P _c
1.	2389.2					5708.3	866.8		.931
2.	2112.4					4462.4	2113.7		.883
3.	1711.2					2928.9	3692.2		.671
4.	1232.6					1550.5	5084.6		.482
5.									

Absolute Potential: 4,450 MCFPD; n .618
COMPANY El Paso Natural Gas Company
ADDRESS P. O. Box 1184 - Jal, New Mexico
AGENT and TITLE R. T. Wright, Petroleum Engineer
WITNESSED Herbert H. Kirby
COMPANY El Paso Natural Gas Company

REMARKS

Of the total fluid produced, 27% was water.

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 .