

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Tubb Gas Formation Tubb County Lea
Initial X Annual _____ Special _____ Date of Test 10-17 to 19, 1964
Company Shell Oil Company Lease Livingston Well No. 7
Unit V Sec. 3 Twp. 21-S Rge. 37-E Purchaser None
Casing 5 1/2" Wt. 15.5 I.D. 4.976 Set at 8129 Perf. 6067 To 6392
Tubing 2" Wt. 4.7 I.D. 1.995 Set at 6531 Perf. 6493 To 6500
Gas Pay: From 6067 To 6392 L 6067 xG Mix .707 -GL 4289 Bar.Press. 13.2
Producing Thru: Casing X Tubing _____ Type Well G. O. Dual
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: 10-19-64 Packer 6420 Reservoir Temp. _____

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps Flge.

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI								1407		42
1.	4	1.500	49	26.0	60			1223		1
2.	4	2.500	50	9.0	60			915		1
3.	4	2.500	52	13.0	60			618		1
4.	4	2.500	54	15.0	60			417		1
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	40.22	62.2	1.000	.9325		524.7
2.	42.13	23.85	63.2	1.000	.9325		937.2
3.	42.13	29.12	65.2	1.000	.9325		1144
4.	42.13	31.75	67.2	1.000	.9325		1248
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 158.663 cf/bbl.
Gravity of Liquid Hydrocarbons 50.8 deg.
F_c 1.758 (1-e^{-S}) .256

Specific Gravity Separator Gas .690
Specific Gravity Flowing Fluid .7763
P_c 1420.2 P_c² 2017.0

No.	P_h P _t (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	$\frac{P_w}{P_c}$
1.	1236.2	1528.2	.922	.850	.218	1528.4	488.6	1236.3	87.1
2.	928.2	861.6	1.648	2.716	.695	862.3	1154.7	928.6	65.4
3.	631.2	398.4	2.011	4.044	1.035	399.4	1617.6	632.0	44.5
4.	430.2	185.1	2.194	4.814	1.232	186.3	1830.7	431.6	30.4
5.									

Absolute Potential: 1.350 MCFPD; n 663
COMPANY Shell Oil Company
ADDRESS P. O. Box 1858, Roswell, New Mexico
AGENT and TITLE A. L. Ellard - Gas Tester
WITNESSED _____
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 .

SHELL OIL COMPANY

LIVINGSTON No. 7

1,350 MCF/24 Hr.

OCTOBER 19, 1964

GAS WELL

BACK PRESSURE CURVE

