

NEW MEXICO OIL CONSERVATION COMMISSION

SEP 7 8 03 AM '65 Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Formation Penn. County Lea
Initial X Annual _____ Special _____ Date of Test August 19, 1965
Company Shell Oil Company Lease State "GRA" Well No. 1
Unit E Sec. 3 Twp. 22S Rge. 34E Purchaser None
Casing 7 5/8 Wt. 29.7 I.D. 6.875 Set at 11,820 Perf. 12,827 To 12,847
Tubing 2 1/2" Wt. 6.5 I.D. 2.441 Set at 12,700 Perf. _____ To _____
Gas Pay: From 12,827 To 12,847 L 12,700 xG M_{sc} .612 BL 7772 Bar. Press. 13.2
Producing Thru: Casing _____ Tubing X Type Well Single
Single-bradenhead-G. G. or G.O. Dual
Date of Completion: 8-19-65 Packer 12,700 Reservoir Temp. 184°F

OBSERVED DATA

Tested Through (Glover) (Shoxe) (Meter) Type Taps Flange

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(<u>Glover</u>) (Line) Size	(<u>Shoxe</u>) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						6025	68			58
1.	4	2.750	610	24.0	79	5082	82			3
2.	4	2.750	800	27.0	82	4845	86			3
3.	4	2.750	800	38.0	79	4588	88			4
4.	4	2.750	810	53.0	62	4090	90			3
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wPF}}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	53.05	122.3	623.2	.9822	1.0084	1.045	6,716
2.	53.05	148.2	813.2	.9795	1.0084	1.055	8,193
3.	53.05	175.8	813.2	.9822	1.0084	1.058	9,773
4.	53.05	208.9	823.2	.9981	1.0084	1.067	11,901
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 130.028 cf/bbl.
Gravity of Liquid Hydrocarbons 50.8 API deg.
F_c 5.866 (1-e^{-s}) .414

Specific Gravity Separator Gas .590
Specific Gravity Flowing Fluid .7762
P_f 7477.2 P_{f2} 55,909

BHP Measured with BHP Bomb

No.	P _{sc} P _{sc} (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ^{-s})	P _{f2} ² P _{f2} ²	P _{f2} ² P _{f2} ² - P _{f2} ²	Cal. P _w	P _w P _w - P _f
1.	6532.2					42,670	13,239		87.4
2.	6289.2					39,554	16,355		84.1
3.	6059.2					36,714	19,195		81.0
4.	5611.2					31,486	24,423		75.0
5.									

Absolute Potential: 26,500 MCFPD; n .954COMPANY Shell Oil CompanyADDRESS Western Division, P. O. Box 1509, Midland, TexasAGENT and TITLE A. L. Ellerd - Gas Tester

WITNESSED _____

COMPANY _____

REMARKS

5 1/2" Liner set from 11,474 to 13,252
PBD 13,207

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 .

**GAS WELL
BACK PRESSURE CURVE**

County LEA Field UNDESIGNATED
 Operator SHELL OIL COMPANY
 Lease STATE "GRA" Well No. 1
 Volume 24,500 MCF/24 hr.
 Date AUGUST 19, 1945

