

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Atoke- Penn Unders. Formation Morrow "C" County Eddy
Initial X Annual _____ Special _____ Date of Test 7/25/64
Company Yates Petroleum Corp. Lease Marathon State AM Well No. 1
Unit P Sec. 16 Twp. 18 Rge. 26 Purchaser _____
Casing 4 1/2 Wt. 11.6 I.D. 4.0 Set at 8950 Perf. Open Hole 8950 To 9300
Tubing 2 3/8 Wt. 4.7 I.D. 1.995 Set at 8840 Perf. Open End To _____
Gas Pay: From 8976 To 8984 L 8840 xG .635 -GL 5613 Bar.Press. 13.2
Producing Thru: Casing _____ Tubing X Type Well Single
Single-Bradenhead-G. G. or G.O. Dual _____
Date of Completion: 6/30/64 Packer 8840 Reservoir Temp. 140

OBSERVED DATA

Tested Through (Packer) (Choke) (Meter) Type Taps Flange

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Packer) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI	3	1.250	-	-	-	3456	92	packer	-	SI
1.	3	"	343	38	76	3193	82			1
2.	3	"	343	60	76	2962	80			1
3.	3	"	525	49	77	2792	84			1
4.	3	"	451	77	77	2607	89			1
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.	9.781	116.34	3206.2	0.9850	0.9798	1.028	1129
2.	9.781	146.17	2975.2	0.9850	0.9798	1.028	1418
3.	9.781	162.40	2805.2	0.9840	0.9798	1.048	1610
4.	9.781	182.06	2620.2	0.9840	0.9798	1.037	1851
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 270,000 cf/bbl.
Gravity of Liquid Hydrocarbons 54 deg.
F_c 9.936 (1-e^{-s}) 0.320

Specific Gravity Separator Gas .625
Specific Gravity Flowing Fluid .635
P_c 3469.2 P_c² 12035

No.	P _t 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	P _w P _c
1.	3206.2	10280	11.217	125.82	40.26	10320	1715	3212	0.9259
2.	2975.2	8852	14.089	198.50	63.52	8916	3119	2986	0.8607
3.	2805.2	7869	15.997	255.90	81.89	7951	4084	2820	0.8129
4.	2620.2	6865	18.392	348.20	111.42	6976	5059	2641	0.7613
5.									

Absolute Potential: 3,000 MCFPD; n 0.55
COMPANY Archie M. Speir
ADDRESS P.O. Drawer 40, Artesia, New Mexico
AGENT and TITLE Archie M. Speir, Engineer
WITNESSED Mr. Marshall Morris
COMPANY Harvey E. Yates

REMARKS

RECEIVED

JUL 30 1964

D. C. C.
ARTESIA, N.M.

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 .