

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Langlie-Mattix Formation Stuart County Lea
Initial _____ Annual _____ Special X Date of Test 1-8-59
Company Amerada Petroleum Corporation Lease F. Stuart Well No. 1
Unit 6 Sec. 22 Twp. 25 Rge. 37 Purchaser El Paso Natural Gas Company
Casing 5 1/2 Wt. 17 1/2 I.D. 4.892 Set at 3285 Perf. 3243 To 3275
Tubing 3 1/2 Reg. Wt. 9.2 1/2 I.D. 2.992 Set at 3210 Perf. Open End To _____
Gas Pay: From 3243 To 3275 L 3210 xG .730 -GL 2347 Bar.Press. 13.2
Producing Thru: Casing _____ Tubing X Type Well G.G. Dual
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: _____ Packer 3174 Reservoir Temp. _____
Closed in for test 12:50 PM 1-5-59
Opened on test 9:00 AM 1-8-59 OBSERVED DATA

Tested Through (Prover) X (Prover) X (Orifice) Type Taps _____

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) Size	(Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI										SI 68 hrs.
1.	2	118	283.6		69.0					3 hrs.
2.	2	3116	171.7		70.2					3 hrs.
3.	2	7132	138.0		61.0					3 hrs.
4.	2	174	66.9		60.3					3 hrs.
5.	2	3216	92.2		56.8					22 1/2 hrs.

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.	0.3416		296.8	0.9915	0.9266	1.037	94.6
2.	0.7851		181.9	0.9905	0.9266	1.021	133.1
3.	1.083		133.2	0.9990	0.9266	1.016	132.8
4.	1.403		102.1	1.000	0.9266	1.011	131.3
5.	0.785		105.4	1.003	0.9266	1.012	76.2

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Infinite cf/bbl.
Gravity of Liquid Hydrocarbons None deg.
F_c 3.447 (1-e^{-s}) 0.149
Specific Gravity Separator Gas .730
Specific Gravity Flowing Fluid _____
P_c 317.5 P_c 100.8

No.	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.	296.8	88	.326	.1063	.0156	82.816	12.72	294.7	99.45
2.	181.9	34	.459	.2106	.0313	34.031	46.77	181.5	99.11
3.	133.2	18	.458	.2098	.0326	18.031	82.77	134.3	12.30
4.	102.1	10	.453	.2052	.0357	10.031	90.17	100.2	31.56
5.	105.4	11	.263	.069	.0183	11.010	89.79	104.9	33.04

Absolute Potential: 81.5 MCFPD; n 0.50
COMPANY Amerada Petroleum Corporation
ADDRESS Drawer D - Mesquite, New Mexico
AGENT and TITLE J. E. Bush District Engineer
WITNESSED Test by L.E. Kirshner - Amerada Petroleum Corporation
COMPANY El Paso Natural Gas Company

REMARKS

In order to prevent waste a 12 hr. 4 point test was taken to determine slope; a 22-1/2 hr. one point was taken to determine the absolute potential. Since the value of n determined from the 4 point test was less than 0.5, a line with a slope of 0.5 was drawn through the 20 hr. point; poor point alignment on the 4 point test is due to the low gas volumes and marginal nature of the well. This 4 point was the rotation of the well.

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 .

Amerada Petroleum Corporation
F. Stuart No. 1
Langlie-Mattix Pool
Lea County
1-8-59

Pc - Pw (1000)

1000

100

Absolute Potential

Assumed n = .5000

Q - MCFPD - 15.025 psia

Flow Rate (Q) [MCFPD]	Pressure Difference (Pc - Pw) [1000 psi]
100	1.5
150	6.8
160	7.5
170	8.2
180	8.8

Assumed n = .5000