

NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE OCC

Form C-122

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

1959 SEP 29 PM 3:04

Pool Jalmat Formation Yates & S.R. County Lea

Initial Annual Special X Date of Test 9-19/23-59

Company Amerada Petroleum Corporation Lease O.M. Hodges Well No. 1

Unit I Sec. 8 Twp. 24S Rge. 37E Purchaser Permian Basin Pipeline Company

Casing 5-1/2" Wt. 14.0# I.D. 5.012" Set at 3475 Perf. 2875 To 3065

Tubing 2-3/8" Wt. 4.7# I.D. 1.995" Set at 3532 Perf. To

Gas Pay: From 2875 To 3065 L 2875 xG 0.645 -GL 1854 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: 4-3-53 Packer 3270' Reservoir Temp. 86° Calculated

CO₂ = 0.00%

N₂ = 1.81%

OBSERVED DATA

Tested Through (~~Standard~~) (~~Standard~~) (Meter)

Type Taps Pipe

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Standard) (Line) Size	(Standard) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI								785.2		69.00
1.	4.00	2.00	462.6	5.5	71			761.6	73	1.00
2.	4.00	2.00	479.7	11.3	66			739.8	76	1.00
3.	4.00	2.00	486.0	19.9	64			703.5	73	1.00
4.	4.00	2.00	488.5	29.7	63			661.9	72	1.00
5.	4.00	2.00	477.2	28.1	65			641.2	76	24.00

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.	29.92	51.16	475.8	0.9896	0.9645	1.044	1525
2.	29.92	74.63	492.9	0.9943	0.9645	1.046	2240
3.	29.92	99.67	499.2	0.9962	0.9645	1.049	3086
4.	29.92	122.10	501.7	0.9971	0.9645	1.049	3685
5.	29.92	117.46	490.4	0.9952	0.9645	1.046	3527

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Dry cf/bbl.
Gravity of Liquid Hydrocarbons - deg.
F_c 1.712 (1-e^{-S}) 0.120

Specific Gravity Separator Gas 0.645
Specific Gravity Flowing Fluid -
P_c 798.4 P_c² 637.4

No.	P _w 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.	774.8	600.3	2.611	6.817	0.818	601.1	36.3	775.3	0.971
2.	753.0	567.0	3.835	14.707	1.765	568.8	68.6	754.2	0.945
3.	716.7	513.7	5.146	26.481	3.178	516.9	120.5	719.0	0.981
4.	675.1	455.8	6.309	39.803	4.776	460.6	176.8	678.7	0.850
5.	654.4	428.2	6.038	36.457	4.375	432.6	204.8	657.7	0.824

Absolute Potential: 6356 MCFPD; n 0.519

COMPANY Amerada Petroleum Corporation

ADDRESS Drawer D - Monument, New Mexico

AGENT and TITLE R. E. Bruch District Engineer

WITNESSED R.L. West

COMPANY Permian Basin Pipeline Company

REMARKS

The slope n obtained from the first four flow rates was applied to a one point test of greater duration to obtain the absolute potential.

APL 4-1-60

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 .