

CORRECTED COPY

Form C-122-A
Revised April 20, 1955

Initial Deliverability
Test

NEW MEXICO OIL CONSERVATION COMMISSION
GAS WELL TEST DATA SHEET - - SAN JUAN BASIN

(TO BE USED FOR FRUITLAND, PICTURED CLIFFS, MESAVERDE, & ALL DAKOTA
EXCEPT BARKER DOME STORAGE AREA)

Pool Blanco Pictured Cliffs Formation Pictured Cliffs County San Juan
Purchasing Pipeline El Paso Natural Gas Company Date Test Filed May 3, 1960
Operator Pan American Petroleum Corp. Lease Lobato Gas Unit "B" Well No. 1-X
Unit K Sec. 2 Twp. 29N Rge. 9W Pay Zone: From 2278 To 2299
Casing: OD 4-1/2 WT. 9.5 Set At 2373 Tubing: OD 1-1/4 WT. 2.3 T. Perf. 2221
Produced Through: Casing X Tubing _____ Gas Gravity: Measured 0.649 Estimated _____
Date of Flow Test: From 4-7-60 To 4-15-60 * Date S.I.P. Measured 12-23-59
Meter Run Size 4" Orifice Size 2.000 Type Chart 8q. Rt. Type Taps Flange

OBSERVED DATA

Flowing casing pressure (Dwt) _____ psig + 12 = _____ psia (a)
Flowing tubing pressure (Dwt) _____ psig + 12 = _____ psia (b)
Flowing meter pressure (Dwt) _____ psig + 12 = _____ psia (c)
Flowing meter pressure (meter reading when Dwt. measurement taken:
Normal chart reading _____ psig + 12 = _____ psia (d)
Square root chart reading (_____) ² x spring constant _____ = _____ psia (d)
Meter error (c) - (d) or (d) - (c) _____ ± _____ = _____ psi (e)
Friction loss, Flowing column to meter:
(b) - (c) Flow through tubing: (a) - (c) Flow through casing _____ = _____ psi (f)
Seven day average static meter pressure (from meter chart):
Normal chart average reading _____ psig + 12 = _____ psia (g)
Square root chart average reading (7.05) ² x sp. const. 5 _____ = 249 psia (g)
Corrected seven day avge. meter press. (p_f) (g) + (e) _____ = 249 psia (h)
P_t = (h) + (f) _____ = 249 psia (i)
Wellhead casing shut-in pressure (Dwt) 1024 psig + 12 = 1024 psia (j)
Wellhead tubing shut-in pressure (Dwt) 1024 psig + 12 = 1024 psia (k)
P_c = (j) or (k) whichever well flowed through _____ = 1024 psia (l)
Flowing Temp. (Meter Run) 69 °F + 460 _____ = 529 °Abs (m)
P_d = 1/2 P_c = 1/2 (l) _____ = 513 psia (n)

FLOW RATE CALCULATION

Q = _____ X $\left(\frac{\sqrt{(c)} = \text{_____} = \text{_____}}{\sqrt{(d)} = \text{_____} = \text{_____}} \right) = \text{_____ MCF/da}$
(integrated)

DELIVERABILITY CALCULATION

D = Q 2,223 $\left[\frac{(P_c^2 - P_d^2) = \text{_____}}{(P_c^2 - P_w^2) = \text{_____}} \right]^n$ 0.8245 = 1833 MCF/da.

SUMMARY

P_c = 1024 psia Company Pan American Petroleum Corporation
Q = 2223 Mcf/day By R. H. Bauer, Jr.
P_w = 249 psia Title Area Engineer
P_d = 513 psia Witnessed by _____
D = 1833 Mcf/day Company _____

- * This is date of completion test.
- * Meter error correction factor

REMARKS OR FRICTION CALCULATIONS

GL	(1-e ^{-S})	(F _c Q) ²	(F _c Q) ² R ²	(1-e ^{-S})	P _t ² (Column i)	P _t ² + R ²	P _w
Friction Loss Negligible							

*Furnished by Pipeline Company

CORRECTED COPY



MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Blanco-Pictured Cliffs Formation Pictured Cliffs County San Juan
Initial I Annual _____ Special _____ Date of Test 12-23-59
Company Pan American Petroleum Corp. Lease Lebato Gas Unit "B" Well No. 1-X
Unit E Sec. 2 Twp. 29N Rge. 9W Purchaser El Paso Natural Gas Company
Casing 4-1/2 Wt. 9.5 I.D. 4.090 Set at 2373 Perf. 2278-2282 and 2296-2299
Tubing 1-1/4" Wt. 2.3 I.D. 1.380 Set at 2221 Perf. 2211 To 2221
Gas Pay: From 2278 To 2299 L 2278 xG 0.65 (est.) GL 1481 Bar.Press. 12
Producing Thru: Casing I Tubing _____ Type Well Gas-single
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: 12-16-59 Packer None Reservoir Temp. 93° F

OBSERVED DATA

Tested Through (~~2278~~) (Choke) (~~2278~~) Type Taps _____

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(2278) (Line) Size	(Choke) (2278) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI	Shut in 7 days					1014		1014		
1.	2-inch	3/4-inch	235		60 (est.)	249	60 (est.)	235	60 (est.)	3 hours
2.										
3.										
4.										
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.	12.365		247	1.000	0.9608	1.024	3604
2.							
3.							
4.							
5.							

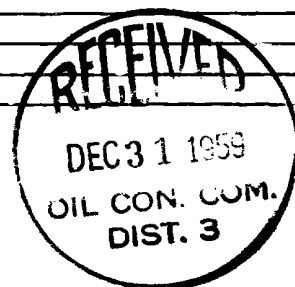
PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.
Gravity of Liquid Hydrocarbons _____ deg.
F_c _____ (1-e^{-s})
Specific Gravity Separator Gas _____
Specific Gravity Flowing Fluid _____
P_c 1026 P_c² 1,052,676

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.						68,121			
2.									
3.									
4.									
5.									

Absolute Potential: 2180 MCFPD; n 0.85
COMPANY Pan American Petroleum Corporation
ADDRESS Box 487, Farmington, New Mexico
AGENT and TITLE R. M. Bauer, Jr., Area Engineer *RMBauer Jr.*
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 .

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