NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Blanco Formation Mesaverde County Rio Arriba

Initial X Annual - Special - Date of Test 9-2-58

Company Magnolia Petroleum Company Lease Jicarilla "D" Well No. 7 LT-MV

Unit M Sec. 13 Twp. 26N Rge. 3W Purchaser Pacific Northwest Pipe Line Corp.

Casing 5" Wt. 15# I.D. 4.408" Set at 6175' Perf. 5558' To 6048'

Tubing 2 3/8" Wt. 4.7# I.D. 1.995" Set at 6034' Perf. - To -

Gas Pay: From 5558' To 6048' L 6034' xG 0.680(est) GL 4103' Bar.Press. 12 psia

Producing Thru: Casing - Tubing X Type Well G-G Dual
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 8-17-58 Packer Yes Reservoir Temp. -

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps -

No.	Flow Data (Prover) (Line) Size	Flow Data (Choke) (Meter) Size	Flow Data Press. psig	Flow Data Diff. h_w	Flow Data Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						1565	-	-	-	
1.	2"	0.750"	260	-	64	260	64	-	-	3 hrs.
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	-	272	0.9962	0.9393	1.030	3241
2.							
3.							
4.							
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio - cf/bbl.
Gravity of Liquid Hydrocarbons - deg.
P_c 9.402 $(1-e^{-s})$ 0.258

Specific Gravity Separator Gas -
Specific Gravity Flowing Fluid 0.680 (est)
P_c 1577 P_c^2 2486.9

No.	Pt (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	272	74.0	30.5	930.2	240.0	314.0	2172.9	-	-
2.									
3.									
4.									
5.									

Absolute Potential: 3575 MCFPD; n 0.75

COMPANY Magnolia Petroleum Company
ADDRESS Box 2406, Hobbs, New Mexico
AGENT and TITLE William A Morgan Jr. Gas Engineer
WITNESSED -
COMPANY -

REMARKS

RECEIVED
SEP 26 1958
OIL CON. COM.
DIST. 3

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.

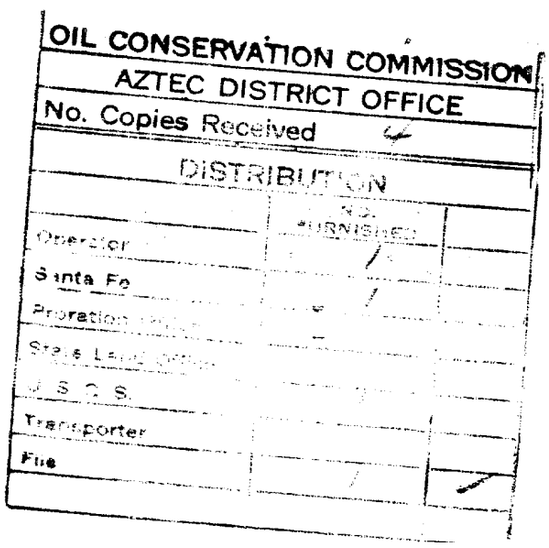
F_g = Gravity correction factor.

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.



LTR

Job separation sheet

Initial Deliverability Test

Form C-122-A
Revised April 20, 1955

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 Formation Mesaverde County Rio Arriba

Purchasing Pipeline Pacific Northwest Pipe Line Corp. Date Test Filed Jan 15, 1959

Operator Magnolia Petroleum Company Lease Jicarilla "D" Well No. 7 LT-MV

Unit M Sec. 13 Twp. 26N Rge. 3W Pay Zone: From 5558' To 6048'

Casing: OD 5" WT. 15# Set At 6175' Tubing: OD 2 3/8" WT. 4.7# T. Perf. 6034'

Produced Through: Casing - Tubing X Gas Gravity: Measured 0.690 Estimated -

Date of Flow Test: From 11-29-58 To 12-7-58 * Date S.I.P. Measured 12-14-58

Meter Run Size 4.026" Orifice Size 1.500" Type Chart Sqr.Rt. Type Taps Flange

OBSERVED DATA

Flowing casing pressure (Dwt)	-	psig + 12 =	-	psia (a)
Flowing tubing pressure (Dwt)	501	psig + 12 =	513	psia (b)
Flowing meter pressure (Dwt)	499	psig + 12 =	511	psia (c)
Flowing meter pressure (meter reading when Dwt. measurement taken:				
Normal chart reading	-	psig + 12 =	-	psia (d)
Square root chart reading (7.15)^2 x spring constant 10		=	511	psia (d)
Meter error (c) - (d) or (d) - (c)	±	=	0	psi (e)
Friction loss, Flowing column to meter:				
(b) - (c) Flow through tubing: (a) - (c) Flow through casing		=	+ 2	psi (f)
Seven day average static meter pressure (from meter chart):				
Normal chart average reading	-	psig + 12 =	-	psia (g)
Square root chart average reading (7.11)^2 x sp. const. 10		=	505	psia (g)
Corrected seven day avge. meter press. (P_f) (g) + (e)		=	505	psia (h)
P_t = (h) + (f)		=	507	psia (i)
Wellhead casing shut-in pressure (Dwt)	-	psig + 12 =	-	psia (j)
Wellhead tubing shut-in pressure (Dwt)	1113	psig + 12 =	1125	psia (k)
P_c = (j) or (k) whichever well flowed through		=	1125	psia (l)
Flowing Temp. (Meter Run) 69 °F + 460		=	529	°Abs (m)
P_d = ½ P_c = ½ (l)		=	563	psia (n)

FLOW RATE CALCULATION

$$Q = 532 \text{ (integrated)} \times \left(\frac{\sqrt{(c)\ 511}}{\sqrt{(d)\ 511}} = \frac{\sqrt{1}}{} = 1 \right)^{*} = 532 \text{ MCF/da}$$

DELIVERABILITY CALCULATION

$$D = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n = 532 \left[\frac{948,656}{1,002,025} \right]^{0.75} = 532 \times 0.947^{0.75} = 532 \times 0.9600 = 511 \text{ MCF/da.}$$

SUMMARY

P_c = 1125 psia
Q = 532 Mcf/day
P_w = 514 psia
P_d = 563 psia
D = 511 Mcf/day

Company Magnolia Petroleum Company
By William A. Wilson
Title Jr. Gas Engineer
Witnessed by -
Company -

RECEIVED
JAN 19 1959
OIL CON. COM
DIST. 3

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

REMARKS OR FRICTION CALCULATIONS

GL	$(1-e^{-s})$	$(F_cQ)^2$	$\frac{(FcQ)^2}{R^2}$ $(1-e^{-s})$	P_t^2 (Column i)	$P_t^2 + R^2$	P_w
4163	0.261	25.02	6.53	257.049	263.6	514

This test was accomplished in accordance with Sec 3, Sub paragraph 1, Paragraph A, sub paragraph 1, Order R-333-C & D, and shall be considered an ~~annual~~ initial test.

RC