NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Formation Pictured Cliffs County Rio Arriba

Initial x Annual - Special - Date of Test 11-6-58

Company Magnolia Petroleum Company Lease Jicarilla "F" Well No. 6 PC-UT

Unit A Sec. 27 Twp. 27N Rge. 3W Purchaser Pacific Northwest

Casing 7 5/8" Wt. 25.40# I.D. 6.969" Set at 4390' Perf. 4074' To 4157'

Tubing 2 3/8" Wt. 4.7# I.D. 1.995" Set at 4157' Perf. - To -

Gas Pay: From 4074' To 4157' L 4157' xG 0.680(est) -GL 2827 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: 10-6-58 Packer None Reservoir Temp. -

OBSERVED DATA

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

No.	Flow Data (Prover) (Line) Size	(Choke) ~~(Orifice)~~ Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						961	-	985	-	
1.	2"	0.750"	88	-	58	88	58	292	-	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.	12.3650	-	100	1.0019	0.9393	-	1164
2.							
3.							
4.							
5.							

PRESSURE CALCULATIONS

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

Specific Gravity Separator Gas -
Specific Gravity Flowing Fluid -
P_c 997 P_c^2 994.0

No.	P_w ~~Pc~~ (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$(F_cQ)^2 (1-e^{-s})$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	304	-	-	-	-	92.4	901.6	-	-
2.									
3.									
4.									
5.									

Absolute Potential: 1262 MCFPD; n 0.85
COMPANY MAGNOLIA PETROLEUM COMPANY
ADDRESS P. O. Box 2406, Hobbs, New Mexico
AGENT and TITLE [signature]
WITNESSED -
COMPANY -

REMARKS

RECEIVED
NOV 14 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.

OIL CONSERVATION COMMISSION		
AZTEC DISTRICT OFFICE		
No. Copies Received	✓	
DISTRIBUTION		
	NSP Engineer	
Operator	1	
	1	
U.S.G.S.	1	
Transporter		
File	1	✓

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 Formation Mesaverde County Rio Arriba

Purchasing Pipeline Pacific Northwest Pipe Line Corporation Date Test Filed March 23, 1959

Operator Magnolia Petroleum Company Lease Jicarilla "F" Well No. 6 LR-MV

Unit A Sec. 27 Twp. 27N Rge. 3W Pay Zone: From 5864' To 6344'

Casing: OD 5" WT. 15# Set At 6442' Tubing: OD 2 3/8" WT. 4.7# T. Perf. 6342'

Produced Through: Casing - Tubing X Gas Gravity: Measured 0.660 Estimated -

Date of Flow Test: From 1-15-59 To 1-22-59 * Date S.I.P. Measured 11-6-58

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)	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 493	psig + 12 =	505	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)	=	505	psia	(i)
Wellhead casing shut-in pressure (Dwt) -	psig + 12 =	-	psia	(j)
Wellhead tubing shut-in pressure (Dwt) 1610	psig + 12 =	1622	psia	(k)
P_c = (j) or (k) whichever well flowed through	=	1622	psia	(l)
Flowing Temp. (Meter Run) 59 °F + 460	=	519	°Abs	(m)
P_d = ½ P_c = ½ (l)	=	811	psia	(n)

FLOW RATE CALCULATION

$$Q = 1615 \text{ (integrated)} \times \left(\frac{\sqrt{(c)\ 1}}{\sqrt{(d)\ 1}} = \frac{1}{1} = 1 \right)^{*} = 1615 \text{ MCF/da}$$

DELIVERABILITY CALCULATION

$$D = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} = \frac{1,973,163}{2,315,454} \right]^{n} = 1615 \left[0.8868 \right]^{0.75} = 1615 \times 0.8868 = 1432 \text{ MCF/da.}$$

SUMMARY

P_c =	1622	psia
Q =	1615	Mcf/day
P_w =	561	psia
P_d =	811	psia
D =	1432	Mcf/day

Company Magnolia Petroleum Company

By William A Magee

Title Jr. Gas Engineer

Witnessed by -

Company -

* This is date of completion test.

* Meter error correction factor

REMARKS OR FRICTION CALCULATIONS

GL	$(1-e^{-s})$	$(F_cQ)2$	$\frac{(FcQ)^2 \quad (1-e^{-s})}{R^2}$	Pt^2 (Column i)	$P_t^2 + R^2$	P_w
4168	0.262	230.554	60.405	255.025	315.430	561