NEW MEXICO OIL CONSERVATION COMMISSION
One-point Back Pressure Test for Gas Wells
(Deliverability)

RECEIVED SEP 29 1961

Form C-122-C
4-1-54

Pool Atoka Formation Pennsylvanian County Eddy
Initial X Annual ____ Special ____ Date of test September 12, 1961
Company Mallard Petroleum, Inc. Lease Meyer-Holt Well No. 1
Unit L Sec. 28 Twp. 18-S Rge. 26-E Purchaser Undecided. Will advise later.
Casing 4 1/2" Wt. 11.6# I.D. 4.000 Set at 9,284' Perf. 9,057' ARTESIA, OFFICE To 9,189'
Tubing 2 3/8" Wt. 4.7# I.D. 1.995 Set at 9,115' Perf. ____ To ____
Gas Pay: From 9,057' To 9,189' L 9,115 x G .641 = GL 5842 Bar.Press. 13.2
Producing Thru: Casing ____ Tubing X Type Well Single
Single- Bradenhead-G.G. or G.O. Dual

FLOW DATA

Started Date	Started time	Taken Date	Taken time	Duration Hours	Type Taps	Line Size	Orfice Size	Static Press.	Differ-ential	Flow Temp.
9-13-61	1:30 AM PM	9-14-61	1:30 AM PM	24	Flange	4"	2 3/4"	715	13	68°

FLOW CALCULATIONS

Static Pressure p_f	Differ-ential h_w	Meter Extension $\sqrt{p_f h_w}$	24-Hour Coeff-icient	Gravity Factor F_g	Temp. Factor F_t	Compress-ability F_{pv}	Rate of Flow MCF/Da. @ 15.025 psia Q
728.2	13	97.3	53.05	.9918	.9933	1.065	5414

SHUT-IN DATA / FLOW DATA

Shut-in Date	Shut-in Time	Press. Taken Date	Press. Taken Time	Duration Hours	Wellhead Pressure (P_c) psia Tubing	Wellhead Pressure (P_c) psia Casing	W.H. Working Pressure (P_w) and (P_t) psia Tubing	W.H. Working Pressure (P_w) and (P_t) psia Casing
9-9-61	1:00 AM PM	9-12-61	1:00 AM PM	72	2877.2	Packer	P_t = 2012.2 P_w = 2237	Packer

FRICTION CALCULATIONS(if necessary)

$P_w^2 = P_t^2 + (FeQ)^2(1-e^{-s}) = (2012.2)^2 + 9.936\ (5414)\ (.331)$
$P_w^2 = 5006$

SUMMARY

P_c = 2877.2 psia
Q = 5415 MCF/Da.
P_w = 2237 psia
P_d = 2301.2 psia
D = 4994 MCF/Da.

DELIVERABILITY CALCULATIONS

P_w 2237 P_c 2877.2 $P_w + P_c$ 0.77749

$1-\frac{P_w}{P_c}$ .22251 $1+\frac{P_w}{P_c}$ 1.77749 $\left(1-\frac{P_w}{P_c}\right)\left(1+\frac{P_w}{P_c}\right) = M$ 0.39551

.36 + M .90101 Log 9.95472-10 x (n) 0.77622 = 9.96486-10+ +

Log Q = 3.73360
Log D = 13.69846-10
Antilog = 4994 = D

COMPANY Mallard Petroleum, Inc.
ADDRESS 304 Gulf Building, Midland, Texas
AGENT and TITLE R. W. Kesner, Petroleum Engineer
WITNESSED Phillip Garrison
COMPANY Parkersburg Rig and Reel Company

REMARKS

This form is to be used for reporting deliverability tests in the designated Dry Gas Pools of Lea County as ordered by New Mexico Oil Conservation Commission Directive dated March 15, 1954, which directive was provided for by Orders R-365-A through R-376-A. For details regarding this test please refer to the above mentioned Directive.

NOMENCLATURE

Q = Actual 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_d = Deliverability pressure; 80 % of 72 hour individual wellhead shut-in pressure (P_c). 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

D = Deliverability at Deliverability pressure (P_d) MCF/da. @ 15.025 psia and 60° F.

P_f = Static 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.

DELIVERABILITY FORMULA

$$D = Q \left[\frac{.36}{\left(1 - \frac{P_w}{P_c}\right)\left(1 + \frac{P_w}{P_c}\right)} \right]^n$$

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.