

NEW MEXICO OIL CONSERVATION COMMISSION  
HOBBBS OFFICE 000

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Eumont Formation Queen (Penrose) County Lea  
Initial Annual Special X Date of Test 8-31-56  
Company Tidewater Oil Company Lease State "AF" Well No. 1  
Unit C Sec. 18 Twp. 21S Rge. 37E Purchaser EPNG Co.  
Casing 5-1/2 Wt. 15.5 I.D. 4.95 Set at 3757 Perf. 3545 To 3638  
Tubing 2-3/8 Wt. 4.7 I.D. 1.995 Set at 3530 Perf. — To —  
Gas Pay: From 3545 To 3638 L 3530 xG 0.680 -GL 2400 Bar.Press. 13.2  
Producing Thru: Casing — Tubing X Type Well Single  
Single-Bradenhead-G. G. or G.O. Dual  
Date of Completion: 5-3-56 Packer None Reservoir Temp. 93° F.

OBSERVED DATA

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

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. $\sqrt{h_w}$	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						700		708		72
1.	4"	1.00	601	3.3	78	667	—	671	—	24
2.	4"	1.00	572	3.8	80	614	—	652	—	24
3.	4"	1.00	580	4.6	78	600	—	634	—	24
4.	4"	1.00	588	5.3	76	*588	—	620	—	24
5.										

\* Unable to obtain 30% draw down due to choke size in meter run.

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wpf}}$	Pressure $\sqrt{psia}$	Flow Temp. Factor $F_t$	Gravity Factor $F_g$	Compress. Factor $F_{pv}$	Rate of Flow Q-MCFPD @ 15.025 psia
1.	6.135	81.77	24.8	0.9831	0.9393	1.064	494
2.	6.135	91.91	24.2	0.9813	0.9393	1.058	549
3.	6.135	112.02	24.4	0.9831	0.9393	1.064	675
4.	6.135	129.93	24.5	0.9850	0.9393	1.064	784
5.							

PRESSURE CALCULATIONS

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

Specific Gravity Separator Gas 0.680  
Specific Gravity Flowing Fluid —  
 $P_c$  721.2  $P_c^2$  520.1

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. $P_w$	$\frac{P_w}{P_c}$
1.	680.2	462.7	—	—	—	468.1	52.0	684	94.8
2.	627.2	393.4	—	—	—	442.5	77.6	665	90.8
3.	613.2	376.0	—	—	—	418.9	101.2	647	89.7
4.	601.2	361.4	—	—	—	400.9	119.2	633	87.8
5.									

Absolute Potential: 2,450 MCFPD; n 0.785  
COMPANY Tidewater Oil Company  
ADDRESS Box 547, Hobbs, New Mexico  
AGENT and TITLE E. W. Hogue, Acting Area Superintendent  
WITNESSED E. O. Smith  
COMPANY EPNG Co.

REMARKS

ELVIS A. UTZ  
345 ENGINEER

## 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  $P_t$ .