

## NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE OCC

Form C-122

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

NOV 19 AM 8:00

Pool Harvest Formation Ogden County LeaInitial \_\_\_\_\_ Annual \_\_\_\_\_ Special X Date of Test 7-23-56 to 7-27-56Company Shell Oil Company Lease State SAN Well No. 1Unit 9 Sec. 35 Twp. 19 S Rge. 36 E Purchaser El Paso Natural Gas CompanyCasing 7 Wt. 21 I.D. 6.336 Set at 3800 Perf. 3330 To 3195Tubing 2 1/2 Wt. 6.5 I.D. 2.448 Set at 3926 Perf. \_\_\_\_\_ To \_\_\_\_\_Gas Pay: From 3330 To 3195 L 3330 xG .670 -GL 2231 Bar.Press. 13.2Producing Thru: Casing X Tubing \_\_\_\_\_ Type Well G. G. DualDate of Completion: 12-24-52 Packer 3777 Reservoir Temp. \_\_\_\_\_

## OBSERVED DATA

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

Flow Data						Tubing Data		Casing Data		Duration of Flow Hr.
No.	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI										
1.	1	1.750	11.8	3.52	87			885		72
2.	1	1.750	11.0	5.1	81			714		24
3.	1	1.750	11.2	6.55	79			610		24
4.	1	1.750	11.9	8.10	79			518		24
5.	1	1.750						450		24

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_f}$	Pressure psia	Flow Temp. Factor F <sub>t</sub>	Gravity Factor F <sub>g</sub>	Compress. Factor F <sub>pv</sub>	Rate of Flow Q-MCFPD @ 15.025 psia
1.	19.27	44.41		.9750	.9143	1.013	800
2.	19.27	63.08		.9801	.9143	1.013	1,113
3.	19.27	82.79		.9822	.9163	1.011	1,504
4.	19.27	103.10		.9822	.9163	1.011	1,873
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio \_\_\_\_\_ cf/bbl.  
Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.  
F<sub>c</sub> .865 (1-e<sup>-S</sup>) .714

Specific Gravity Separator Gas \_\_\_\_\_  
Specific Gravity Flowing Fluid \_\_\_\_\_  
P<sub>c</sub> 898.2 P<sub>c</sub> 806.8

No.	P <sub>w</sub> P <sub>t</sub> (psia)	P <sub>t</sub> <sup>2</sup>	F <sub>c</sub> Q	(F <sub>c</sub> Q) <sup>2</sup>	(F <sub>c</sub> Q) <sup>2</sup> (1-e <sup>-S</sup> )	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> -P <sub>w</sub> <sup>2</sup>	Cal. P <sub>w</sub>	P <sub>w</sub> P <sub>c</sub>
1.	727.2	528.8	1.0	1.0	.97	528.8	277.2	727.2	.8097
2.	551.2	303.7	1.3	1.69	.97	303.7	300.2	551.2	.7773
3.	561.2	314.9	1.3	1.70	.97	314.9	291.8	561.2	.6819
4.	463.2	214.6	1.6	2.56	.97	214.6	591.8	463.2	.5263
5.									

Absolute Potential: 2,500 MCFPD; n 1.000COMPANY Shell Oil CompanyADDRESS Box 1457, Hobbs, New MexicoAGENT and TITLE W. M. LinkerWITNESSED Edward MabeCOMPANY El Paso Natural Gas Company

## REMARKS

Good point alignment and pull-down. Slope too flat, and due to results of second test being the same as results of first test, a slope of 45° was drawn through the highest rate of flow.

ELVIS A. ULL  
GAS 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  $P_t$ .

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