

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool 12100 Formation Pictured Cliffs County San Juan  
Initial    Annual    Special    Date of Test 10/17/59  
Company Astec Oil and Gas Company Lease None Well No. 12  
Unit A Sec. 10 Twp. 29N Rge. 10W Purchaser     
Casing 4 1/2 Wt. 9.5 I.D. 4.090 Set at 2351 Perf. 2236 To 2151  
Tubing 1 Wt. 1.7 I.D. 1.069 Set at 2326 Perf. 2303 To 2313  
Gas Pay: From 2236 To 2331 L    xG    -GL    Bar.Press.     
Producing Thru: Casing X Tubing    Type Well Single-gas  
Date of Completion: 10/17/59 Packer    Single-Bradenhead-G. G. or G.O. Dual  
Reservoir Temp.   

T. - 2353'

## OBSERVED DATA

Tested Through (Prover) (Choke) (Valve) Type Taps   

| No. | Flow Data            |                        |             | Tubing Data          |           | Casing Data |           | Duration of Flow Hr. |
|-----|----------------------|------------------------|-------------|----------------------|-----------|-------------|-----------|----------------------|
|     | (Prover) (Line) Size | (Choke) (Orifice) Size | Press. psig | Diff. h <sub>w</sub> | Temp. °F. | Press. psig | Temp. °F. |                      |
| SI  |                      |                        |             |                      |           |             |           |                      |
| 1.  |                      | .750                   | 183         |                      |           | 170         |           | 1 day                |
| 2.  |                      |                        |             |                      |           | 203         | 10        | 1 hours              |
| 3.  |                      |                        |             |                      |           |             |           |                      |
| 4.  |                      |                        |             |                      |           |             |           |                      |
| 5.  |                      |                        |             |                      |           |             |           |                      |

## FLOW CALCULATIONS

| No. | Coefficient (24-Hour) | $\sqrt{h_{wpf}}$ | 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.  | 12.345                |                  | 200           | 1.000                            | .9408                         | 1.019                            | 2.121                              |
| 2.  |                       |                  |               |                                  |                               |                                  |                                    |
| 3.  |                       |                  |               |                                  |                               |                                  |                                    |
| 4.  |                       |                  |               |                                  |                               |                                  |                                    |
| 5.  |                       |                  |               |                                  |                               |                                  |                                    |

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio    cf/bbl.  
Gravity of Liquid Hydrocarbons    deg.  
P<sub>c</sub>    (1-e<sup>-s</sup>)     
Specific Gravity Separator Gas     
Specific Gravity Flowing Fluid     
P<sub>c</sub> 689 P<sub>c</sub><sup>2</sup> 474,521

| No. | P <sub>w</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.  | 235                   |                             |                  |                                 |  | 55,225                      | 474,521  |                     |                                |
| 2.  |                       |                             |                  |                                 |  |                             |  |                     |                                |
| 3.  |                       |                             |                  |                                 |  |                             |  |                     |                                |
| 4.  |                       |                             |                  |                                 |  |                             |  |                     |                                |
| 5.  |                       |                             |                  |                                 |  |                             |  |                     |                                |

Absolute Potential: 2,416 MCFPD; n .85

COMPANY Astec Oil and Gas Company  
ADDRESS Box # 726, Farmington, New Mexico  
AGENT and TITLE ORIGINAL SIGNED BY D. K. BRYANT D. K. Bryant, Production Engineer  
WITNESSED     
COMPANY   

REMARKS



## 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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