

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

| | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------|--|---------------------------------------------------------------------------|--|-------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------|--|
| Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special | | | | | | | Test Date <div style="text-align: right;">11-11-1997</div> | | |
| Company Williams Production Company | | | | Connection | | | | | |
| Pool Basin | | | | Formation <div style="text-align: center;">Fruitland Coal</div> | | | Unit | | |
| Completion Date | | Total Depth | | Plug Back TD | | Elevation | | Farm or Lease Name <div style="text-align: center;">Rosa Unit</div> | |
| Casing Size | | Weight d | | Set At | | Perforations: From To | | Well No. <div style="text-align: center;">338</div> | |
| Tubing Size | | Weight d | | Set at | | Perforations: From To | | Unit Sec Twp Rng L 32 32N 6W | |
| Type Well - Single - Bradenhead - GG or GO Multiple | | | | Packer Set At | | | County <div style="text-align: center;">San Juan</div> | | |
| Producing Thru <div style="text-align: center;">Tubing</div> | | Reservoir Temp. °F | | Mean Annual Temp. °F | | Barometer Pressure - P _a | | State <div style="text-align: center;">New Mexico</div> | |
| L H | | Gq <div style="text-align: center;">.6</div> | | %CO ₂ | | %N ₂ | | %H ₂ S | |
| | | | | | | Prover <div style="text-align: center;">3/4"</div> | | Meter Run Taps | |

| FLOW DATA | | | | | TUBING DATA | | CASING DATA | | | |
|-----------|-------------|---|--------------|-------------------|----------------|-------------------|----------------|-------------------|----------------|-------------|
| NO. | Prover Line | X | Orifice Size | Pressure p.s.i.q. | Temperature °F | Pressure p.s.i.q. | Temperature °F | Pressure p.s.i.q. | Temperature °F | Duration of |
| SI | | | 2" x 3/4" | | | 1220 | 48° | 1220 | | 0 |
| 1. | | | | | | 680 | 78° | 1038 | | 0.5 hr |
| 2. | | | | | | 602 | 86° | 944 | | 1.0 hr |
| 3. | | | | | | 575 | 78° | 905 | | 1.5 hrs |
| 4. | | | | | | 520 | 79° | 888 | | 2.0 hrs |
| 5. | | | | | | 510 | 79° | 877 | | 3.0 hrs |

| RATE OF FLOW CALCULATIONS | | | | | | | |
|---------------------------|-----------------------|------------------|-------------------------|-------------------|----------------|-----------------|--------------|
| NO. | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure P _m | Flow Temp. Factor | Gravity Factor | Super Compress. | Rate of Flow |
| 1. | 9.604 | | 522 | .9822 | 1.29 | 1.075 | 6828 |
| 2. | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |

| | | | | | |
|-----|----------------|----------|---|---|--------------------------------------------------|
| NO. | P _r | Temp. °R | T | Z | Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl. |
| 1. | | | | | A.P.I. Gravity of Liquid Hydrocarbons _____ Deq. |
| 2. | | | | | Specific Gravity Separator _____ XXXXXX |
| 3. | | | | | Specific Gravity Flowing Fluid _____ |
| 4. | | | | | Critical Pressure _____ p.s.i.a. _____ p.s.i.a. |
| 5. | | | | | Critical Temperature _____ R _____ R |

| | | | | | |
|----------------------------|-----------------------------|--------------------------------------------|-----------------------------|-----------------------------------------------------------|--|
| P _c <u>1232</u> | | P _c ² <u>1517824</u> | | DIST. 3 | |
| NO. | P _i ¹ | P _w | P _w ² | P _c ² - P _w ² | |
| 1. | | 889 | 790321 | 727503 | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \underline{2.08634}$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \underline{1.73596}$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \underline{11.853}$

| | | | | | |
|------------------------------------------------|--|-------------------------------|--|---------------------|--|
| Absolute Open Flow 11.853 Mcfd @ 15.025 | | Angle of Slope θ _____ | | Slope, n .75 | |
|------------------------------------------------|--|-------------------------------|--|---------------------|--|

Remarks: _____

| | | | |
|-------------------------|---------------|------------------------------|-------------|
| Approved By Commission: | Conducted By: | Calculated By: Susan Griguin | Checked By: |
|-------------------------|---------------|------------------------------|-------------|