

NEW MEXICO OIL CONSERVATION COMMISSION  
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED

Form C-122  
Revised 9-1-65

MAR 09 '88

|                                                                                                                           |  |                                   |  |                                                   |  |                                          |  |
|---------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|--|---------------------------------------------------|--|------------------------------------------|--|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |  |                                   |  | Test Date<br>3/4/88                               |  | O. C. E.                                 |  |
| Company<br>Bass Enterprises Prod. Co.                                                                                     |  |                                   |  | Connection<br>Natural Gas Pipeline Co. of America |  | ARTISIA OFFICE                           |  |
| Pool<br>Atoka                                                                                                             |  |                                   |  | Formation<br>Atoka                                |  | Unit<br>Big Eddy Unit                    |  |
| Completion Date<br>3/4/88                                                                                                 |  | Total Depth<br>12,635'            |  | Plug Back TD<br>11,756'                           |  | Elevation<br>3219' GL                    |  |
| Csg. Size<br>5 1/2                                                                                                        |  | Wt.<br>17#                        |  | Set At<br>12,635                                  |  | Perforations:<br>From To                 |  |
| Thq. Size<br>2 3/8                                                                                                        |  | Wt.<br>4.70                       |  | Set At<br>11,337                                  |  | Perforations:<br>From 11,426' To 11,431' |  |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single Gas                                                     |  |                                   |  | Packer Set At<br>11,337'                          |  | County<br>Eddy County                    |  |
| Producing Thru                                                                                                            |  | Reservoir Temp. °F<br>167 @ 11429 |  | Mean Annual Temp. °F<br>60                        |  | Baro. Press. - P <sub>a</sub><br>13.2    |  |
| L<br>11429                                                                                                                |  | H<br>11429                        |  | Gg<br>.595                                        |  | State<br>New Mexico                      |  |
| Gg<br>.595                                                                                                                |  | % CO <sub>2</sub><br>.41          |  | % N <sub>2</sub><br>1.09                          |  | % H <sub>2</sub> S<br>0.00               |  |
| Prover<br>0.00                                                                                                            |  | Meter Run<br>3.1                  |  | Taps<br>Flange                                    |  |                                          |  |

  

| FLOW DATA |                  |   |              |                 |                      | TUBING DATA |                 | CASING DATA |                 | Duration of Flow |          |
|-----------|------------------|---|--------------|-----------------|----------------------|-------------|-----------------|-------------|-----------------|------------------|----------|
| NO.       | Prover Line Size | X | Orifice Size | Press. p.s.i.g. | Diff. h <sub>w</sub> | Temp. °F    | Press. p.s.i.g. | Temp. °F    | Press. p.s.i.g. |                  | Temp. °F |
| SI        |                  |   |              |                 |                      |             |                 |             | 5778            | 167              | 72.0     |
| 1.        | 3.07 x 1.750     |   |              | 213             | 2.2                  | 52          | 0               | 0           | 5422            | 167              | 1.0      |
| 2.        | 3.07 x 1.750     |   |              | 213             | 4.5                  | 56          | 0               | 0           | 4952            | 167              | 1.0      |
| 3.        | 3.07 x 1.750     |   |              | 219             | 8.8                  | 58          | 0               | 0           | 4320            | 167              | 1.0      |
| 4.        | 3.07 x 1.750     |   |              | 225             | 12.5                 | 58          | 0               | 0           | 3491            | 167              | 1.0      |
| 5.        |                  |   |              |                 |                      |             |                 |             |                 |                  |          |

  

| RATE OF FLOW CALCULATIONS |                       |                  |                         |                       |                   |                             |                      |
|---------------------------|-----------------------|------------------|-------------------------|-----------------------|-------------------|-----------------------------|----------------------|
| NO.                       | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure P <sub>m</sub> | Flow Temp. Factor Ft. | Gravity Factor Fg | Super Compress. Factor, Fpv | Rate of Flow Q, Mcfd |
| 1                         | 15.61                 | 22.31            | 225.8                   | 1.0078                | 1.2964            | 1.0204                      | 464                  |
| 2                         | 15.61                 | 31.88            | 225.8                   | 1.0039                | 1.2964            | 1.0198                      | 660                  |
| 3                         | 15.61                 | 45.29            | 232.6                   | 1.0019                | 1.2964            | 1.0201                      | 937                  |
| 4                         | 15.61                 | 54.55            | 238.0                   | 1.0019                | 1.2964            | 1.0206                      | 1129                 |
| 5                         |                       |                  |                         |                       |                   |                             |                      |

  

| NO. | P <sub>f</sub> | Temp. °R | T <sub>f</sub> | Z    | Gas Liquid Hydrocarbon Ratio | A.P.I. Gravity of Liquid Hydrocarbons | Specific Gravity Separator Gas | Specific Gravity Flowing Fluid | Critical Pressure | Critical Temperature |
|-----|----------------|----------|----------------|------|------------------------------|---------------------------------------|--------------------------------|--------------------------------|-------------------|----------------------|
| 1   | .34            | 512      | 1.45           | .960 | 0.0 Mcf/bbl.                 | 0.0 Deg.                              | .595                           | X X X X X X X X                | 673 P.S.I.A.      | 353 R                |
| 2   | .34            | 516      | 1.46           | .962 |                              |                                       |                                | X X X X X                      |                   |                      |
| 3   | .35            | 518      | 1.47           | .961 |                              |                                       |                                |                                |                   |                      |
| 4   | .35            | 518      | 1.47           | .960 |                              |                                       |                                |                                |                   |                      |
| 5   |                |          |                |      |                              |                                       |                                |                                |                   |                      |

  

| NO. | P <sub>f</sub> <sup>2</sup> | P <sub>w</sub> | P <sub>w</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> |
|-----|-----------------------------|----------------|-----------------------------|-----------------------------------------------------------|
| 1   | 29541                       | 4309           | 18570                       | 2805                                                      |
| 2   | 24653                       | 3901           | 15216                       | 6159                                                      |
| 3   | 18777                       | 3364           | 11316                       | 10059                                                     |
| 4   | 12279                       | 2685           | 7209                        | 14166                                                     |
| 5   |                             |                |                             |                                                           |

  

(1)  $\frac{P_c^2}{P_c^2 - P_w^2} = 1.5089$

AOF = Q  $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1415$

(2)  $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.2536$

  

|                         |                    |                |      |             |      |
|-------------------------|--------------------|----------------|------|-------------|------|
| Absolute Open Flow      | 1415 Mcfd @ 15.025 | Angle of Slope | 61.2 | Slope, n    | .549 |
| Remarks:                |                    |                |      |             |      |
| Approved by Commission: |                    |                |      |             |      |
| Conducted By:           |                    | Calculated By: |      | Checked By: |      |
| M. J. No.               |                    | "Well Testing" |      |             |      |

OPEATOR E s Enterprises

LEASE Big Eddy Unit WELL # 70

COUNTY Eddy County, New Mexico

DATE 3-6-88 VOLUME 1415 MCF/DAY

