

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

Form C-122

*4515  
File*

|                                                                                                                           |              |                              |                           |                                    |                            |                                                     |                    |                                         |  |
|---------------------------------------------------------------------------------------------------------------------------|--------------|------------------------------|---------------------------|------------------------------------|----------------------------|-----------------------------------------------------|--------------------|-----------------------------------------|--|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |              |                              |                           |                                    |                            | Test Date<br>02/27/93                               |                    |                                         |  |
| Company<br>Yates Petroleum Corp                                                                                           |              |                              |                           | Connection<br>Enron                |                            | DEC 27 '94                                          |                    |                                         |  |
| Pool<br>Abo                                                                                                               |              |                              |                           | Formation<br>Pecos Slope           |                            |                                                     |                    |                                         |  |
| Completion Date<br>12/23/92                                                                                               |              | Total Depth<br>4300          |                           | Plug Back TD<br>4240               |                            | Elevation<br>3658                                   |                    | Farm or Lease Name<br>Catterson Federal |  |
| Csg. Size<br>4.500                                                                                                        | Wt<br>10.500 | d<br>4.052                   | Set At<br>4300            | Perforations:<br>From 3688 To 3862 |                            | Well No.<br>5                                       |                    |                                         |  |
| Tbg Size<br>2.375                                                                                                         | Wt<br>4.700  | d<br>1.995                   | Set At<br>3558            | Perforations:<br>From 3688 To 3862 |                            | Unit    Sec.    Twp.    Rge.<br>k    7    7S    26E |                    |                                         |  |
| Type Well<br>Single                                                                                                       |              |                              |                           |                                    |                            | Packer Set At<br>3558                               |                    | County<br>Chaves                        |  |
| Producing Thru<br>Tubing                                                                                                  |              | Resv. Temp. °F<br>103 @ 3775 |                           | Mean Temp. °F<br>62                |                            | Baro. Press. - Pa<br>13.2                           |                    | State<br>New Mexico                     |  |
| L<br>3558                                                                                                                 | H<br>3558    | Gg<br>0.639                  | %CO <sub>2</sub><br>0.566 | %N <sub>2</sub><br>5.690           | %H <sub>2</sub> S<br>0.000 | Prover<br>0.000                                     | Meter Run<br>2.000 | 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. hw | Temp. °F    | Press. p.s.i.g. | Temp. °F    | Press. p.s.i.g. |                  | Temp. °F |
| SI        | 0.000            | x | 0.000        | 0               | 0.0      | 0           | 780             | 0           |                 |                  | 0        |
| 1.        | 2.067            | x | 1.375        | 150             | 52.0     | 49          | 440             | 62          |                 |                  | 24       |
| 2.        | 2.067            | x | 1.375        | 150             | 67.0     | 51          | 343             | 62          |                 |                  | 24       |
| 3.        | 2.067            | x | 1.375        | 135             | 71.0     | 45          | 247             | 62          |                 |                  | 24       |
| 4.        | 2.067            | x | 1.375        | 150             | 88.0     | 42          | 150             | 62          |                 |                  | 24       |
| 5.        |                  | x |              |                 |          |             |                 |             |                 |                  |          |

  

| RATE OF FLOW CALCULATIONS |                       |                      |             |                       |                   |                             |                      |
|---------------------------|-----------------------|----------------------|-------------|-----------------------|-------------------|-----------------------------|----------------------|
| NO.                       | Coefficient (24 Hour) | $\sqrt{\text{hwPm}}$ | Pressure Pm | Flow Temp. Factor Ft. | Gravity Factor Fg | Super Compress. Factor, Fpv | Rate of Flow Q, Mcfd |
| 1.                        | 10.200                | 92.1                 | 163.2       | 1.0108                | 1.251             | 1.014                       | 1205                 |
| 2.                        | 10.200                | 104.6                | 163.2       | 1.0088                | 1.251             | 1.014                       | 1365                 |
| 3.                        | 10.200                | 102.6                | 148.1       | 1.0148                | 1.251             | 1.013                       | 1346                 |
| 4.                        | 10.200                | 119.8                | 163.2       | 1.0178                | 1.251             | 1.015                       | 1580                 |
| 5.                        |                       |                      |             |                       |                   |                             |                      |

  

|     |      |         |      |       |                                                |              |
|-----|------|---------|------|-------|------------------------------------------------|--------------|
| NO. | Pr   | Temp °R | Tr   | Z     | Gas Liquid Hydrocarbon Ratio<br>0              | Mcf/bbl.     |
| 1   | 0.25 | 509     | 1.45 | 0.972 | A.P.I. Gravity of Liquid Hydrocarbons<br>0.000 | Deg          |
| 2   | 0.25 | 511     | 1.45 | 0.972 | Specific Gravity Separator Gas<br>0.639        | XXXXXXXXXX   |
| 3   | 0.22 | 505     | 1.43 | 0.974 | Specific Gravity Flowing Fluid<br>XXXXXXXXXXXX | 0.639        |
| 4   | 0.25 | 502     | 1.43 | 0.970 | Critical Pressure<br>664                       | P.S.I.A. 664 |
| 5   |      |         |      |       | Critical Temperature<br>352                    | °R 352       |

  

|     |                 |                 |                 |
|-----|-----------------|-----------------|-----------------|
| Pc  | 793.2           | Pc <sup>2</sup> | 629.2           |
| NO. | Pt <sup>2</sup> | Pw              | Pw <sup>2</sup> |
| 1.  | 205.4           | 472.9           | 223.6           |
| 2.  | 126.9           | 388.1           | 150.6           |
| 3.  | 67.7            | 301.9           | 91.1            |
| 4.  | 26.6            | 243.5           | 59.3            |
| 5.  |                 |                 |                 |

(1)  $\frac{Pc^2}{Pc^2 - Pw^2} = 1.315$

AOF = Q  $\left[ \frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 1698$

(2)  $\left[ \frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 1.244$

  

|                         |      |                               |                |                                    |    |             |       |
|-------------------------|------|-------------------------------|----------------|------------------------------------|----|-------------|-------|
| Absolute Open Flow      | 1698 | Mcf/d @ 15.025                | Angle of Slope | 0                                  | 39 | Slope, n    | 0.797 |
| Remarks                 |      |                               |                |                                    |    |             |       |
| Approved By Commission: |      | Conducted By:<br>David Weaver |                | Calculated By:<br>Andrea Carpenter |    | Checked By: |       |

# WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

DATE 02/27/93

COMPANY Yates Petroleum Corp LEASE Catterson Federal WELL NO. 5

LOCATION: Unit k Section 7 Township 7S Range 26E

L 3558 H 3558 L/H 1.000 G 0.639 %CO<sub>2</sub> 0.566 %N<sub>2</sub> 5.690 %H<sub>2</sub>S 0.000

d 1.995 Fr 0.017777 GH 2273.6 Pcr 663.6 Tcr 352.0

| LINE                                                  | 1st Rate | 2nd Rate | 3rd Rate | 4th Rate | 5th Rate |
|-------------------------------------------------------|----------|----------|----------|----------|----------|
| 1 Qm                                                  | 1.205    | 1.365    | 1.346    | 1.580    |          |
| 2 Tw(W.H.°R)                                          | 522      | 522      | 522      | 522      |          |
| 3 Ts(B.H.°R)                                          | 563      | 563      | 563      | 563      |          |
| 4 T = (Tw+Ts) / 2                                     | 542.2    | 542.2    | 542.2    | 542.2    |          |
| 5 Z (Est.)                                            | 0.934    | 0.947    | 0.959    | 0.970    |          |
| 6 TZ                                                  | 506.4    | 513.2    | 520.1    | 526.1    |          |
| 7 GH / TZ                                             | 4.490    | 4.430    | 4.371    | 4.322    |          |
| 8 e <sup>As</sup> (Table XIV)                         | 1.183    | 1.181    | 1.178    | 1.176    |          |
| 9 1-e <sup>As</sup> (Table XIV)                       | 0.155    | 0.153    | 0.151    | 0.150    |          |
| 10 Pt                                                 | 453.2    | 356.2    | 260.2    | 163.2    |          |
| 11 Pt <sup>2</sup> / 1000                             | 205.4    | 126.9    | 67.7     | 26.6     |          |
| 12 Fr (Table XV)                                      | 0.017777 | 0.017777 | 0.017777 | 0.017777 |          |
| 13 Fc = FrTZ                                          | 9.002    | 9.123    | 9.246    | 9.352    |          |
| 14 FcQm                                               | 10.85    | 12.46    | 12.45    | 14.78    |          |
| 15 L / H(FcQm) <sup>2</sup>                           | 117.7    | 155.1    | 154.9    | 218.3    |          |
| 16 Fw = L / H(FcQm) <sup>2</sup> (1-e <sup>As</sup> ) | 18.24    | 23.74    | 23.42    | 32.66    |          |
| 17 Pw <sup>2</sup> = Pt <sup>2</sup> +Fw              | 223.6    | 150.6    | 91.1     | 59.3     |          |
| 18 Ps <sup>2</sup> = e <sup>As</sup> Pw <sup>2</sup>  | 264.6    | 177.8    | 107.4    | 69.7     |          |
| 19 Ps                                                 | 514.4    | 421.7    | 327.6    | 264.1    |          |
| 20 P = (Pt+Ps) / 2                                    | 483.8    | 389.0    | 293.9    | 213.6    |          |
| 21 Pr = (P / Pcr)                                     | 0.73     | 0.59     | 0.44     | 0.32     |          |
| 22 Tr = (T / Tcr)                                     | 1.54     | 1.54     | 1.54     | 1.54     |          |
| 23 Z (Table XI)                                       | 0.934    | 0.947    | 0.959    | 0.970    |          |

Company  
Well  
Location

Yates Petroleum Corp  
Catterson Federal #5  
k 7-7S-26E

County  
Date

Chaves  
02-27-93

