

# WORKSHEET FOR CALCULATION OF SIC COLUMN WELLHEAD PRESSURE (P<sub>w</sub>)

C-122D  
Adapted 9-1-65

COMPANY Yates Petroleum Corp LEASE ARCO "EE" State WELL NO. 1 DATE May 29-1975

LOCATION: Unit B Section 36 Township 17-S Range 25-E

L 40' Annulus - 5 1/2" H 8335 L/H 1.000 G<sub>min</sub> 0.646 %CO<sub>2</sub> 0.34 %N<sub>2</sub> 0.34 %H<sub>2</sub>S —  
8295' Tubing - 2 7/8" d 2.441 F<sub>i</sub> 0.010726 GH 5387.9 P<sub>cr</sub> 6271 T<sub>cr</sub> 373  
TABLE IX B X TABLE IX B X

| LINE                                                                                    | 5       | 1       | 2       | 3       | 4       | 5      | 1      | 2      | 3       | 4       |
|-----------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|--------|--------|--------|---------|---------|
| 1 Q <sub>m</sub>                                                                        | —       | 18250   | 13171   | 8495    | 6354    |        | 18250  | 13171  | 8495    | 6354    |
| 2 T <sub>w</sub> (B.H. °R)                                                              | 520     | 524     | 529     | 534     | 536     |        |        |        |         |         |
| 3 T <sub>s</sub> (B.H. °R)                                                              | 600     | 592     | 593     | 594     | 594     |        |        |        |         |         |
| 4 T = (T <sub>w</sub> + T <sub>s</sub> )                                                | 560     | 558     | 561     | 564     | 565     |        | 560    | 558    | 561     | 564     |
| 5 Z (E <sub>sc</sub> )                                                                  | .785    | .800    | .780    | .780    | .780    | (.781) | (.790) | (.794) | (.777)  | (.779)  |
| 6 T <sub>Z</sub>                                                                        | 439.6   | 446.4   | 437.6   | 439.9   | 440.7   |        | 440.82 | 434.21 | 438.2   | 440.1   |
| 7 GH/TZ                                                                                 | 12.2564 | 12.0692 | 12.3129 | 12.2475 | 12.2258 | 12.319 | 12.222 | 12.408 | 12.2947 | 12.2415 |
| 8 e <sup>s</sup> (Table XIV)                                                            | 1.583   | 1.572   | 1.587   | 1.583   | 1.581   | 1.587  | 1.581  | 1.592  | 1.586   | 1.583   |
| 9 1-e <sup>s</sup> (Table XIV)                                                          | —       | .364    | .370    | .368    | .368    | —      | .368   | .372   | .369    | .368    |
| 10 P <sub>1</sub>                                                                       | 2494.2  | 1016.2  | 1739.2  | 2119.2  | 2228.2  | 2494.2 | 1016.2 | 1739.2 | 2119.2  | 2228.2  |
| 11 P <sub>1</sub> Z/1000                                                                | 6221.0  | 1032.7  | 3024.8  | 4491.0  | 4964.9  | 6221.0 | 1032.7 | 3024.8 | 4491.0  | 4964.9  |
| 12 F <sub>1</sub> (Table XV)                                                            |         |         |         |         |         |        |        |        |         |         |
| 13 F <sub>1</sub> e = F <sub>1</sub> TZ                                                 | 4.7881  | 4.6935  | 4.7186  | 4.7269  |         | 4.7282 | 4.6594 | 4.7004 | 4.7209  |         |
| 14 F <sub>1</sub> Q <sub>m</sub>                                                        |         | 87.383  | 61.818  | 40.084  | 30.035  |        | 86.290 | 61.342 | 39.930  | 29.997  |
| 15 L/H (F <sub>1</sub> Q <sub>m</sub> ) <sup>2</sup>                                    |         | 7635.8  | 3821.4  | 1606.8  | 902.1   |        | 7446.0 | 3762.9 | 1594.4  | 899.8   |
| 16 F <sub>1</sub> L/H (F <sub>1</sub> Q <sub>m</sub> ) <sup>2</sup> (1-e <sup>s</sup> ) |         | 2779.4  | 1413.9  | 591.3   | 332.0   |        | 2740.1 | 1399.8 | 588.3   | 331.1   |
| 17 F <sub>1</sub> Z <sup>2</sup> = P <sub>1</sub> Z <sup>2</sup> + F <sub>w</sub>       |         | 3812.1  | 4433.7  | 5082.3  | 5296.9  |        | 3722.8 | 4424.6 | 5079.3  | 5296.0  |
| 18 F <sub>1</sub> Z <sup>2</sup> = e <sup>s</sup> P <sub>1</sub> Z <sup>2</sup>         | 9847.9  | 5992.6  | 7044.3  | 8045.3  | 8374.4  | 9872.8 | 5964.8 | 7043.9 | 8055.8  | 8383.6  |
| 19 P <sub>s</sub>                                                                       | 3138.1  | 2448.0  | 2654.1  | 2836.4  | 2893.8  | 3142.1 | 2442.3 | 2654.0 | 2838.3  | 2875.4  |
| 20 P = (P <sub>1</sub> + P <sub>s</sub> )                                               | 2816.2  | 1732.1  | 2196.7  | 2477.8  | 2561.0  | 2813.1 | 1729.3 | 2196.6 | 2478.7  | 2561.8  |
| 21 P <sub>1</sub> = (P/P <sub>cr</sub> )                                                | 4.197   | 2.581   | 3.274   | 3.693   | 3.817   | 4.200  | 2.577  | 3.274  | 3.694   | 3.818   |
| 22 T <sub>1</sub> = (T/T <sub>cr</sub> )                                                | 1.501   | 1.496   | 1.504   | 1.512   | 1.515   | 1.501  | 1.496  | 1.504  | 1.512   | 1.515   |
| 23 Z (Table XI)                                                                         | .741    | .790    | .774    | .777    | .779    | (.781) | (.790) | (.774) | (.777)  | (.779)  |