

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

C-122D  
Revised 9-1-65

COMPANY Citic Petroleum Co. LEASE Barren "M" WELL NO. 3 DATE 6-6-73

LOCATION: Unit H 6924 Section 27 Township 35 Range 24E

L 6924 H 6924 L/H 1.000 G 570 % CO<sub>2</sub> 0 % N<sub>2</sub> 0 % H<sub>2</sub>S 0

d 2.441 F<sub>i</sub> 0.010763 GH 3947 P<sub>ci</sub> 672 T<sub>ci</sub> 346  
TABLE IX & X TABLE IX & X

| LINE                                                                                      | 1st     | 2nd     | 1st     | 2nd     | 1st     | 2nd     | 1st     | 2nd     |  |  |
|-------------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|
| 1 Q <sub>m</sub>                                                                          | .694    | .694    | 1.356   | 1.356   | 1.658   | 1.658   | 1.680   | 1.680   |  |  |
| 2 T <sub>w</sub> (W.H. °R)                                                                | 534     | 534     | 534     | 534     | 534     | 534     | 534     | 534     |  |  |
| 3 T <sub>s</sub> (B.H. °R)                                                                | 552     | 552     | 552     | 552     | 552     | 552     | 552     | 552     |  |  |
| 4 T = ( $\frac{T_w}{2} + T_s$ )                                                           | 563     | 563     | 563     | 563     | 563     | 563     | 563     | 563     |  |  |
| 5 Z (Est.)                                                                                | .829    | .822    | .872    | .865    | .930    | .923    | .936    | .930    |  |  |
| 6 TZ                                                                                      | 446.7   | 462.8   | 490.9   | 487.0   | 523.6   | 519.6   | 527.0   | 523.6   |  |  |
| 7 GH/TZ                                                                                   | 8.457   | 8.528   | 8.040   | 8.105   | 7.538   | 7.596   | 7.490   | 7.538   |  |  |
| 8 e <sup>s</sup> (Table XIV)                                                              | 1.373   | 1.377   | 1.352   | 1.355   | 1.327   | 1.330   | 1.324   | 1.327   |  |  |
| 9 1-e <sup>s</sup> (Table XIV)                                                            | .272    | .274    | .260    | .262    | .246    | .248    | .245    | .246    |  |  |
| 10 P <sub>i</sub>                                                                         | 1508.2  | 1508.2  | 1195.2  | 1195.2  | 614.2   | 614.2   | 555.2   | 555.2   |  |  |
| 11 P <sub>i</sub> 2/1000                                                                  | 3641.2  | 3641.2  | 1428.5  | 1428.5  | 377.2   | 377.2   | 308.2   | 308.2   |  |  |
| 12 F <sub>i</sub> (Table XV)                                                              | .010763 | .010763 | .010763 | .010763 | .010763 | .010763 | .010763 | .010763 |  |  |
| 13 F <sub>c</sub> = F <sub>i</sub> TZ                                                     | 5.023   | 4.981   | 5.284   | 5.242   | 5.637   | 5.593   | 5.672   | 5.635   |  |  |
| 14 F <sub>c</sub> Q <sub>m</sub>                                                          | 2.597   | 3.566   | 7.165   | 7.108   | 9.289   | 9.217   | 9.529   | 9.467   |  |  |
| 15 L/H (F <sub>c</sub> Q <sub>m</sub> ) <sup>2</sup>                                      | 12.94   | 12.72   | 51.34   | 50.52   | 86.29   | 84.96   | 90.79   | 89.63   |  |  |
| 16 F <sub>w</sub> = L/H (F <sub>c</sub> Q <sub>m</sub> ) <sup>2</sup> (1-e <sup>s</sup> ) | 5.57    | 3.48    | 13.36   | 13.24   | 21.24   | 21.06   | 22.23   | 22.07   |  |  |
| 17 P <sub>w</sub> <sup>2</sup> = P <sub>i</sub> <sup>2</sup> + F <sub>w</sub>             | 3644.9  | 3644.7  | 1442.9  | 1441.7  | 398.5   | 398.3   | 330.5   | 330.3   |  |  |
| 18 P <sub>s</sub> <sup>2</sup> = e <sup>s</sup> P <sub>w</sub> <sup>2</sup>               | 5004.9  | 5018.4  | 1949.2  | 1953.8  | 528.6   | 529.6   | 437.7   | 438.2   |  |  |
| 19 P <sub>s</sub>                                                                         | 3237.2  | 2240.2  | 1396.1  | 1397.8  | 727.1   | 727.7   | 661.6   | 662.0   |  |  |
| 20 P = ( $\frac{P_i + P_s}{2}$ )                                                          | 2072.7  | 2074.2  | 1295.7  | 1296.5  | 670.6   | 671.0   | 603.4   | 602.6   |  |  |
| 21 P <sub>i</sub> = (P/P <sub>ci</sub> )                                                  | 3.08    | 3.09    | 1.93    | 1.93    | 1.00    | 1.00    | .91     | .91     |  |  |
| 22 T <sub>i</sub> = (T/T <sub>ci</sub> )                                                  | 1.63    | 1.63    | 1.63    | 1.63    | 1.63    | 1.63    | 1.63    | 1.63    |  |  |
| 23 Z (Table XI)                                                                           | .822    | .822    | .865    | .865    | .923    | .923    | .930    | .930    |  |  |