

WORK SHEET FOR CALCULATION OF WELLBORE PRESSURE ( $P_c$  or  $P_w$ )  
FROM KNOWN BOTTOM HOLE PRESSURE ( $P_f$  or  $P_s$ )

FORM C-122F

COMPANY SANTA FE ENERGY LEASE : ROARING SPWELL NO. : 13 #4 DATE 3/24/97  
UNIT SECTION : TOWNSHIP : RANGE :  
L 9214 H : 9214 L/H : 1 G/GMIX : 0.5860  
CO2 : 0.8 N2 : 0.16 H2S :  
GH : 5399.4 PCR : 675 TCR : 346

| LINE |                                            | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      |
|------|--------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1    | TW(W.H. R)                                 | 534    | 534    | 534    | 534    | 534    | 534    | 534    | 534    |
| 2    | Ts(B.H. R)                                 | 626.1  | 626.1  | 626.1  | 626.1  | 626.1  | 626.1  | 626.1  | 626.1  |
| 3    | $T = (T_w + T_s / 2)$                      | 580.1  | 580.1  | 580.1  | 580.1  | 580.1  | 580.1  | 580.1  | 580.1  |
| 4    | Z (EST.)                                   | 0.896  | 0.838  | 0.837  | 0.842  | 0.857  | 0.865  | 0.868  | 0.876  |
| 5    | TZ                                         | 520    | 486    | 486    | 489    | 497    | 502    | 504    | 508    |
| 6    | GH/TZ                                      | 10.390 | 11.109 | 11.118 | 11.052 | 10.858 | 10.764 | 10.719 | 10.628 |
| 7    | eS(TABLE XIV)                              | 1.476  | 1.517  | 1.517  | 1.514  | 1.503  | 1.497  | 1.495  | 1.490  |
| 8    | $P_f$ or $P_s$                             | 2159   | 2159   | 1999   | 1999   | 1453   | 1453   | 1259.2 | 1259.2 |
| 9    | $P_f2$ or $P_s2$                           | 4661.3 | 4661.3 | 3996.0 | 3996.0 | 2111.2 | 2111.2 | 1585.6 | 1585.6 |
| 10   | $P_c2 = P_f / eS$ or $P_w2 = P_s2 / eS$    | 3157.1 | 3073.2 | 2633.7 | 2640.1 | 1405.1 | 1410.0 | 1060.8 | 1064.4 |
| 11   | $P_c$ or $P_w$                             | 1777   | 1753   | 1623   | 1625   | 1185   | 1187   | 1030   | 1032   |
| 12   | $P = (P_w + P_s / 2)$ or $(P_c + P_f / 2)$ | 1968   | 1956   | 1811   | 1812   | 1319   | 1320   | 1145   | 1145   |
| 13   | $P_r = (P / P_{cr})$                       | 2.92   | 2.90   | 2.68   | 2.68   | 1.95   | 1.96   | 1.70   | 1.70   |
| 14   | $Tr(T / T_{cr})$                           | 1.68   | 1.68   | 1.68   | 1.68   | 1.68   | 1.68   | 1.68   | 1.68   |
| 15   | Z (TABLE XI)                               | 0.838  | 0.838  | 0.842  | 0.842  | 0.865  | 0.865  | 0.876  | 0.876  |

PW 1 : 1753.1 PW 2 : 1624.9 PW 3 : 1187.4 PW 4 : 1031.7