

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w)FROM KNOWN BOTTOM HOLE PRESSURE (P_b or P_s)COMPANY QXY USA LEASE GOVERNMENT "HE" WELL NO. 4 DATE 5-1-89LOCATION: Unit L Section 9 Township 20 Range 28* 11010 H 11010 L/H 1.100 G 0.820 % CO₂ 0.93 % N₂ 0.31 % H₂S 0* BNP INSTR. SET @ FMS DEPTH. GH 6826.2 P_{CT} 671 T_{CT} 365

* FLOWING BNP'S REPORTED TO SURFACE (3)

LINE	1	2	3	4	5	6	7
1	T _w (W.H. °R)	534	534	534	534	534	534
2	T _s (B.H. °R)	644	644	644	644	644	644
3	T = ($\frac{T_w + T_s}{2}$)	589	589	589	589	589	589
4	Z (Est.)	1.818	1.820	1.821	1.816	1.817	1.835
5	TZ	481.8	482.9	483.5	480.6	482.3	481.8
6	GH/TZ	14.168	14.133	14.116	14.202	13.946	13.618
7	e ^s (Table XIV)	1.701	1.698	1.697	1.703	1.687	1.666
8	P _T or P _s	3125.2	3125.2	2899.2	2899.2	2531.2	2007.2
9	P _T ² or P _s ²	9766.9	9766.9	8405.4	8405.4	6407.0	4028.9
10	P _c = P _T ² /e ^s or P _w = P _s ² /e ^s	5741.3	5748.7	4950.6	4734.5	3797.7	2917.6
11	P _c or P _w	2396.1	2397.1	2224.9	2221.3	1948.7	1547.8
12	P _c ($\frac{P_w + P_s}{2}$) or ($\frac{P_c + P_s}{2}$)	2760.6	2761.4	2562.0	2560.2	2236.2	1781.0
13	P _T = (P/P _{CT})	4.11	4.11	3.81	3.81	3.33	2.61
14	T _T = (T/T _{CT})	1.61	1.61	1.61	1.61	1.61	1.61
15	Z (Table XI)	1.820	1.820	1.816	1.816	1.819	1.835