

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w)

FROM KNOWN BOTTOM HOLE PRESSURE (P_1 or P_2)

COMPANY Hannan Oil Co. LEASE State L-430 WELL NO. 1 DATE 8-27-54

LOCATION: Unit K Section 2 Township 24S Range 6E

10400 H 10400 L/H 1,000 G/Mix .6529 % CO₂ .533 % N₂ .653 % H₂S

GH 6790 P_{cr} 670 T_{cr} 375
1st Rate 2nd Rate 3rd Rate 4th Rate

LINE	1	2	3	4	5	6	7	8
1	T_w (W.H. °R)	534	534	534	534	534	534	534
2	T_g (B.H. °R)	638	638	638	638	638	638	638
3	$T = (\frac{T_w + T_g}{2})$	586	586	586	586	586	586	586
4	Z (Est.)	1.012	.967	.948	.918	.884	.853	.816
5	TZ	593.0	566.7	561.4	537.9	518.0	499.9	478.2
6	GH/TZ	11.450	11.462	12.095	12.622	13.102	13.524	14.131
7	e^S (Table XIV)	1.536	1.567	1.574	1.605	1.635	1.665	1.703
8	P_1 or P_2	5470.2	4470.2	4850.2	4850.2	3917.2	3717.2	2735.2
9	P_1^2 or P_2^2	29922.1	19982.1	23524.4	23524.4	15344.5	15344.5	7421.3
10	$P_c^2 = P_1^2/e^S$ or $P_w^2 = P_2^2/e^S$	19477.4	10022.7	14946.5	14654.0	9385.9	9219.8	4493.9
11	P_c or P_w	441.2	316.5	3866.1	3828.1	3063.6	3036.4	2095.8
12	$P - (\frac{P_w + P_s}{2})$ or $(\frac{P_c + P_1}{2})$	4941.8	4919.9	4358.1	4339.1	3490.4	3476.8	2415.5
13	$P_r = (P/P_{cr})$	7.38	7.34	6.51	6.48	5.21	5.19	3.61
14	$T_r = (T/T_{cr})$	1.56	1.56	1.56	1.56	1.56	1.56	1.56
15	Z (Table XI)	91.7	91.4	91.9	91.7	95.2	95.3	91.6