

COMPANY Natco Petroleum Corp LEASE Smerno 15 NL STATE WELL NO. 5 DATE 5/20/82

LOCATION: Unit D Section 2 Township 55 Range 24E
 L 378.1 H 3484 LH 1.000 C .920 % CO₂ 2.90 % N₂ 8.01 % H₂S —
 d 1.995 F₁ .01823 GH 2924 P_{cr} 42 T_{cr} 365
TABLE IX B X TABLE IX B X

LINE	1 st rate	2 nd rate	3 rd rate	4 th rate	5 th rate	6 th rate	7 th rate	8 th rate	9 th rate	10 th rate	11 th rate	12 th rate	13 th rate	14 th rate	15 th rate	16 th rate	17 th rate	18 th rate	19 th rate	20 th rate	21 th rate	22 th rate	23 th rate	
1 Q _m	.095	.156	.204	.251	.298	.345	.392	.439	.486	.533	.580	.627	.674	.721	.768	.815	.862	.909	.956	1.003	1.050	1.097	1.144	1.191
2 T _w (W.H. °R)	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519
3 T _g (B.H. °R)	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54
4 T = (T _w + T _g) / 2	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62
5 L (Btu)	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898	.898
6 T _z	493.44	481.94	470.44	458.94	447.44	435.94	424.44	412.94	401.44	389.94	378.44	366.94	355.44	343.94	332.44	320.94	309.44	297.94	286.44	274.94	263.44	251.94	240.44	228.94
7 GH-TZ	5.1123	5.652	6.192	6.732	7.272	7.812	8.352	8.892	9.432	9.972	10.512	11.052	11.592	12.132	12.672	13.212	13.752	14.292	14.832	15.372	15.912	16.452	16.992	17.532
8 e ^s (Table XIV)	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233	1.233
9 1-e ^s (Table XIV)	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193	.193
10 P _z	971.2	686.2	443.2	243.2	44.3.2	213.2	45.5	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823
11 P _z 2/1000	591.7	473.6	243.2	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823
12 F _z (Table XVI)	.21523	.04623	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823	.01823
13 F _z = F _z TZ	8.661	8.786	9.092	9.672	9.516	2.550	6.304	1.128	46.6	56.1	233.1	245.6	253.1	260.6	268.1	275.6	283.1	290.6	298.1	305.6	313.1	320.6	328.1	335.6
14 F _z Q _m	-823	1.591	1.851	5.425	6.37	1.128	46.6	56.1	233.1	245.6	253.1	260.6	268.1	275.6	283.1	290.6	298.1	305.6	313.1	320.6	328.1	335.6	343.1	350.6
15 L/H (F _z Q _m) ²	.478	1.818	.637	5.425	6.37	1.128	46.6	56.1	233.1	245.6	253.1	260.6	268.1	275.6	283.1	290.6	298.1	305.6	313.1	320.6	328.1	335.6	343.1	350.6
16 F _w = L/H (F _z Q _m) ² (1-e ^s)	.131	.359	.637	5.425	6.37	1.128	46.6	56.1	233.1	245.6	253.1	260.6	268.1	275.6	283.1	290.6	298.1	305.6	313.1	320.6	328.1	335.6	343.1	350.6
17 P _w ² = P _z ² + F _w	594.9	414.0	299.5	547.3	233.1	245.6	253.1	260.6	268.1	275.6	283.1	290.6	298.1	305.6	313.1	320.6	328.1	335.6	343.1	350.6	358.1	365.6	373.1	380.6
18 F _s ² = e ^s P _w ²	937.1	585.2	299.5	547.3	233.1	245.6	253.1	260.6	268.1	275.6	283.1	290.6	298.1	305.6	313.1	320.6	328.1	335.6	343.1	350.6	358.1	365.6	373.1	380.6
19 F _s	838.3	763.4	547.3	233.1	245.6	253.1	260.6	268.1	275.6	283.1	290.6	298.1	305.6	313.1	320.6	328.1	335.6	343.1	350.6	358.1	365.6	373.1	380.6	387.7
20 P = (P _z + P _s) / 2	814.9	726.8	547.3	233.1	245.6	253.1	260.6	268.1	275.6	283.1	290.6	298.1	305.6	313.1	320.6	328.1	335.6	343.1	350.6	358.1	365.6	373.1	380.6	387.7
21 P _r = (P/P _z)	1.20	1.09	.97	.84	.72	.60	.48	.36	.24	.12	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
22 T _r = (T/T _z)	1.45	1.08	1.48	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919
23 Z (Table XI)	.878	.896	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919	.919

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