

Company: HRM Resources, LLC
WellName: Dutton 21-22
Location: NWNW Sec. 22, T4N, R67W, 6th PM

Vertical Section calculated on an Azimuth of: 57.0233
Survey Calculation Method: Minimum Curvature
FileName: F:\WELL REPORTS\HRM Resources LLC\Dutton 21-22\Dutton 21-22 WB SURV.pl4.sr5

#	Depth Feet	Inc Degrees	Azimuth Degrees	TVD Feet	SubSea Feet	North Feet	East Feet	Section Feet	Dogleg /100 ft	BldRate /100 ft	Trnrate /100 ft	Comment
0	0.00	0.00	57.02	0.00	4870.00	0.00	0.00	0.00	0.00	0.00	0.00	
1	100.00	0.00	57.02	100.00	4770.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	57.02	200.00	4670.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	300.00	0.00	57.02	300.00	4570.00	0.00	0.00	0.00	0.00	0.00	0.00	
4	400.00	0.00	57.02	400.00	4470.00	0.00	0.00	0.00	0.00	0.00	0.00	
5	500.00	0.00	57.02	500.00	4370.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	600.00	0.00	57.02	600.00	4270.00	Surface Casing		0.00	0.00	0.00	0.00	
7	700.00	0.00	57.02	700.00	4170.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	800.00	0.00	57.02	800.00	4070.00	0.00	0.00	0.00	0.00	0.00	0.00	
9	900.00	0.00	57.02	900.00	3970.00	0.00	0.00	0.00	0.00	0.00	0.00	
KOP, B.G. = 2°/100ft												
10	1000.00	0.00	57.02	1000.00	3870.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	1100.00	2.00	57.02	1099.98	3770.02	0.95	1.46	1.75	2.00	2.00	0.00	
12	1200.00	4.00	57.02	1199.84	3670.16	3.80	5.85	6.98	2.00	2.00	0.00	
13	1300.00	6.00	57.02	1299.45	3570.55	8.54	13.17	15.69	2.00	2.00	0.00	
14	1400.00	8.00	57.02	1398.70	3471.30	15.17	23.39	27.88	2.00	2.00	0.00	
15	1500.00	10.00	57.02	1497.47	3372.53	TOS, TAN = 10°		43.52	2.00	2.00	0.00	
16	1600.00	10.00	57.02	1595.95	3274.05	23.69	36.51	60.89	0.00	0.00	0.00	
						33.14	51.08					
17	1700.00	10.00	57.02	1694.43	3175.57	42.59	65.65	78.25	0.00	0.00	0.00	
18	1800.00	10.00	57.02	1792.91	3077.09	52.04	80.21	95.62	0.00	0.00	0.00	
19	1900.00	10.00	57.02	1891.39	2978.61	61.50	94.78	112.98	0.00	0.00	0.00	
20	2000.00	10.00	57.02	1989.87	2880.13	70.95	109.35	130.35	0.00	0.00	0.00	
21	2100.00	10.00	57.02	2088.35	2781.65	80.40	123.91	147.71	0.00	0.00	0.00	
22	2200.00	10.00	57.02	2186.83	2683.17	89.85	138.48	165.08	0.00	0.00	0.00	
23	2300.00	10.00	57.02	2285.31	2584.69	99.30	153.05	182.44	0.00	0.00	0.00	
24	2400.00	10.00	57.02	2383.79	2486.21	108.75	167.62	199.81	0.00	0.00	0.00	
25	2500.00	10.00	57.02	2482.27	2387.73	118.21	182.18	217.17	0.00	0.00	0.00	
26	2600.00	10.00	57.02	2580.75	2289.25	127.66	196.75	234.54	0.00	0.00	0.00	
27	2700.00	10.00	57.02	2679.23	2190.77	137.11	211.32	251.90	0.00	0.00	0.00	
28	2800.00	10.00	57.02	2777.71	2092.29	146.56	225.88	269.27	0.00	0.00	0.00	
29	2900.00	10.00	57.02	2876.20	1993.80	156.01	240.45	286.63	0.00	0.00	0.00	
30	3000.00	10.00	57.02	2974.68	1895.32	165.46	255.02	303.99	0.00	0.00	0.00	
31	3100.00	10.00	57.02	3073.16	1796.84	174.92	269.59	321.36	0.00	0.00	0.00	
32	3200.00	10.00	57.02	3171.64	1698.36	184.37	284.15	338.72	0.00	0.00	0.00	
33	3300.00	10.00	57.02	3270.12	1599.88	193.82	298.72	356.09	0.00	0.00	0.00	
34	3400.00	10.00	57.02	3368.60	1501.40	203.27	313.29	373.45	0.00	0.00	0.00	
35	3500.00	10.00	57.02	3467.08	1402.92	212.72	327.85	390.82	0.00	0.00	0.00	
36	3600.00	10.00	57.02	3565.56	1304.44	222.17	342.42	408.18	0.00	0.00	0.00	
37	3700.00	10.00	57.02	3664.04	1205.96	231.63	356.99	425.55	0.00	0.00	0.00	
38	3800.00	10.00	57.02	3762.52	1107.48	241.08	371.56	442.91	0.00	0.00	0.00	
39	3900.00	10.00	57.02	3861.00	1009.00	250.53	386.12	460.28	0.00	0.00	0.00	
40	4000.00	10.00	57.02	3959.48	910.52	259.98	400.69	477.64	0.00	0.00	0.00	

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WellName: Dutton 21-22
Location: NWNW Sec. 22, T4N, R67W, 6th PM

Vertical Section calculated on an Azimuth of: 57.0233

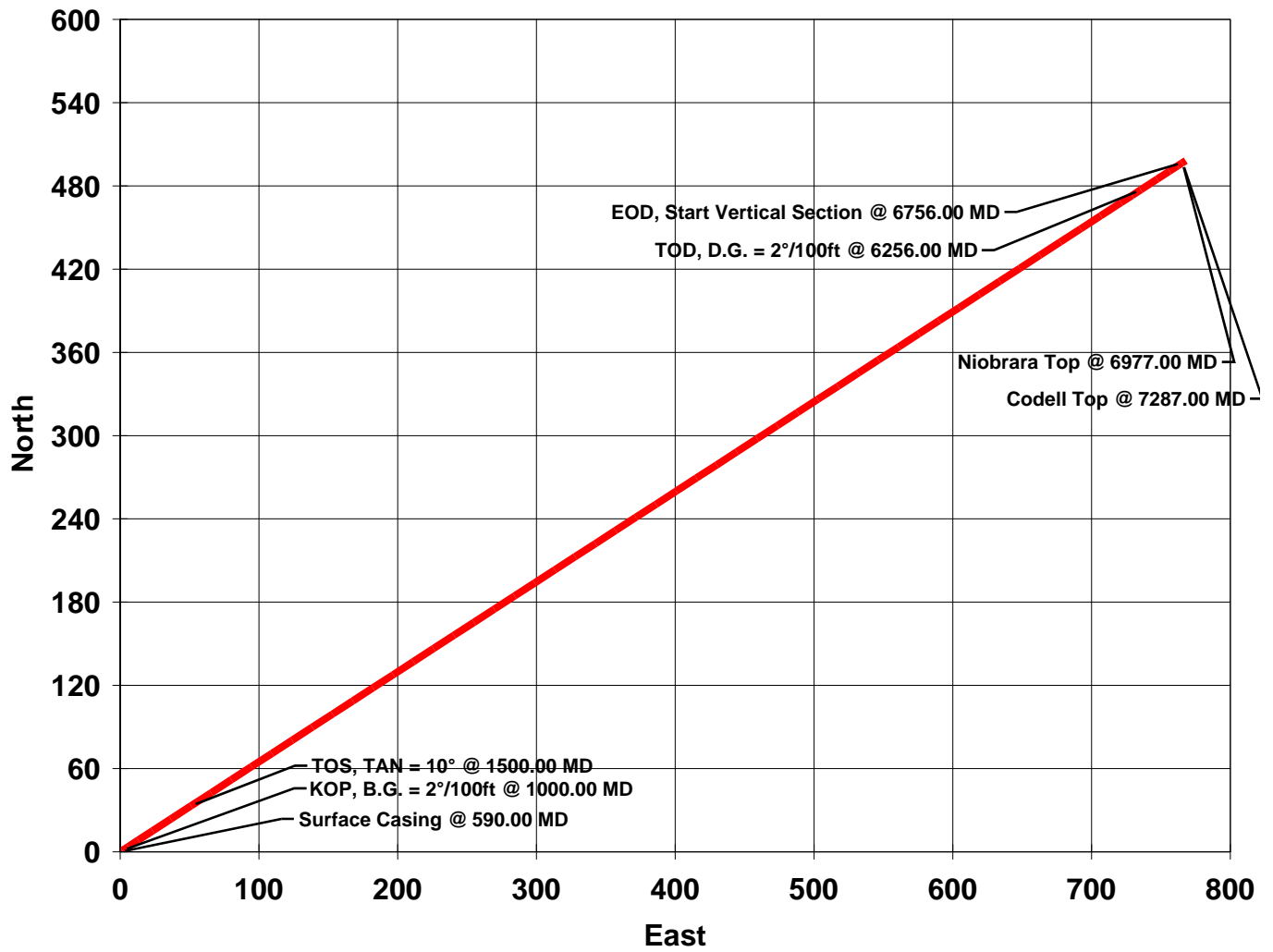
Survey Calculation Method: Minimum Curvature

FileName: F:\WELL REPORTS\HRM Resources LLC\Dutton 21-22\Dutton 21-22 WB SURV.pl4.sr5

#	Depth Feet	Inc Degrees	Azimuth Degrees	TVD Feet	SubSea Feet	North Feet	East Feet	Section Feet	Dogleg /100 ft	BldRate /100 ft	Trnrate /100 ft	Comment
41	4100.00	10.00	57.02	4057.96	812.04	269.43	415.26	495.01	0.00	0.00	0.00	
42	4200.00	10.00	57.02	4156.44	713.56	278.88	429.83	512.37	0.00	0.00	0.00	
43	4300.00	10.00	57.02	4254.93	615.07	288.34	444.39	529.74	0.00	0.00	0.00	
44	4400.00	10.00	57.02	4353.41	516.59	297.79	458.96	547.10	0.00	0.00	0.00	
45	4500.00	10.00	57.02	4451.89	418.11	307.24	473.53	564.47	0.00	0.00	0.00	
46	4600.00	10.00	57.02	4550.37	319.63	316.69	488.09	581.83	0.00	0.00	0.00	
47	4700.00	10.00	57.02	4648.85	221.15	326.14	502.66	599.20	0.00	0.00	0.00	
48	4800.00	10.00	57.02	4747.33	122.67	335.59	517.23	616.56	0.00	0.00	0.00	
49	4900.00	10.00	57.02	4845.81	24.19	345.04	531.80	633.93	0.00	0.00	0.00	
50	5000.00	10.00	57.02	4944.29	-74.29	354.50	546.36	651.29	0.00	0.00	0.00	
51	5100.00	10.00	57.02	5042.77	-172.77	363.95	560.93	668.66	0.00	0.00	0.00	
52	5200.00	10.00	57.02	5141.25	-271.25	373.40	575.50	686.02	0.00	0.00	0.00	
53	5300.00	10.00	57.02	5239.74	-369.74	382.85	590.06	703.39	0.00	0.00	0.00	
54	5400.00	10.00	57.02	5338.22	-468.22	392.30	604.63	720.75	0.00	0.00	0.00	
55	5500.00	10.00	57.02	5436.70	-566.70	401.75	619.20	738.12	0.00	0.00	0.00	
56	5600.00	10.00	57.02	5535.18	-665.18	411.21	633.77	755.48	0.00	0.00	0.00	
57	5700.00	10.00	57.02	5633.66	-763.66	420.66	648.33	772.84	0.00	0.00	0.00	
58	5800.00	10.00	57.02	5732.14	-862.14	430.11	662.90	790.21	0.00	0.00	0.00	
59	5900.00	10.00	57.02	5830.62	-960.62	439.56	677.47	807.57	0.00	0.00	0.00	
60	6000.00	10.00	57.02	5929.10	-1059.10	449.01	692.03	824.94	0.00	0.00	0.00	
61	6100.00	10.00	57.02	6027.58	-1157.58	458.46	706.60	842.30	0.00	0.00	0.00	
62	6200.00	10.00	57.02	6126.06	-1256.06	467.92	721.17	859.67	0.00	0.00	0.00	
63	6254.60	10.00	57.02	6179.83	-1309.83	473.08	729.12	869.15	0.00	0.00	0.00	
TOD, D.G. = 2°/100ft												
64	6300.00	9.09	57.02	6224.61	-1354.61	477.17	735.44	876.68	2.00	2.00	0.00	
65	6400.00	7.09	57.02	6323.60	-1453.60	484.84	747.25	890.75	2.00	2.00	0.00	
66	6500.00	5.09	57.02	6423.04	-1553.04	490.61	756.15	901.37	2.00	2.00	0.00	
67	6600.00	3.09	57.02	6522.78	-1652.78	494.50	762.14	908.50	2.00	2.00	0.00	
68	6700.00	1.09	57.02	6622.70	-1752.70	496.48	765.20	912.15	2.00	2.00	0.00	
69	6754.60	0.00	57.02	6677.30	-1807.30	496.77	765.63	912.67	2.00	2.00	0.00	
EOD, Start Vertical Section												
70	6800.00	0.00	57.02	6722.70	-1852.70	496.77	765.63	912.67	0.00	0.00	0.00	
71	6900.00	0.00	57.02	6822.70	-1952.70	496.77	765.63	912.67	0.00	0.00	0.00	
Niobrara Top												
72	7000.00	0.00	57.02	6922.70	-2052.70	496.77	765.63	912.67	0.00	0.00	0.00	
73	7100.00	0.00	57.02	7022.70	-2152.70	496.77	765.63	912.67	0.00	0.00	0.00	
Codell Top												
74	7200.00	0.00	57.02	7122.70	-2252.70	496.77	765.63	912.67	0.00	0.00	0.00	
75	7300.00	0.00	57.02	7222.70	-2352.70	496.77	765.63	912.67	0.00	0.00	0.00	
76	7400.00	0.00	57.02	7322.70	-2452.70	496.77	765.63	912.67	0.00	0.00	0.00	
TD												
77	7500.00	0.00	57.02	7422.70	-2552.70	496.77	765.63	912.67	0.00	0.00	0.00	
78	7600.00	0.00	57.02	7522.70	-2652.70	496.77	765.63	912.67	0.00	0.00	0.00	
79	7700.00	0.00	57.02	7622.70	-2752.70	496.77	765.63	912.67	0.00	0.00	0.00	

Closure is 912.6726 feet on an Azimuth of 57.0233

**Plan View
Dutton 21-22**



Section View Dutton 21-22

