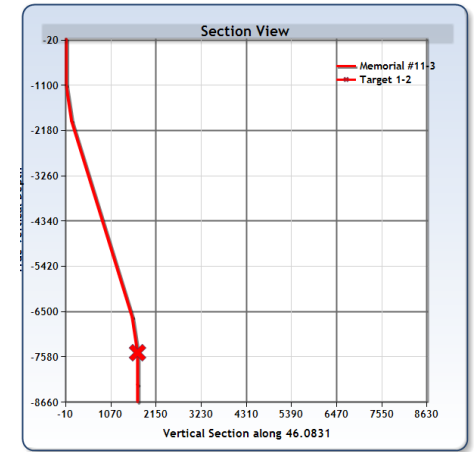
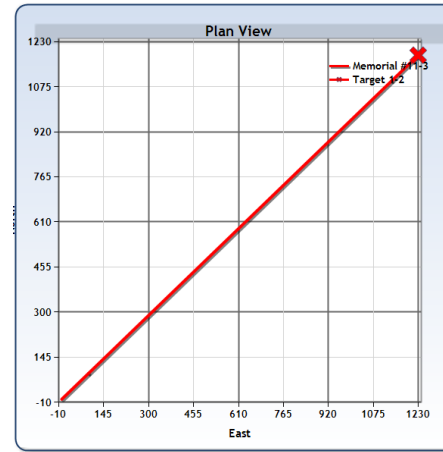


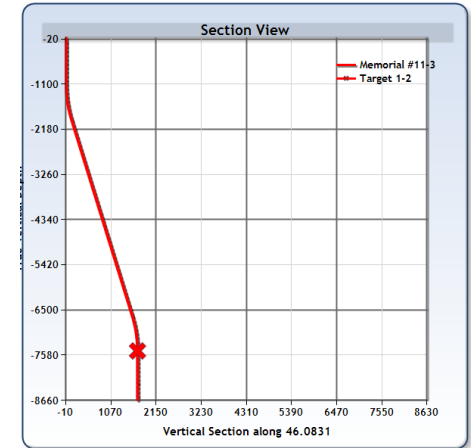
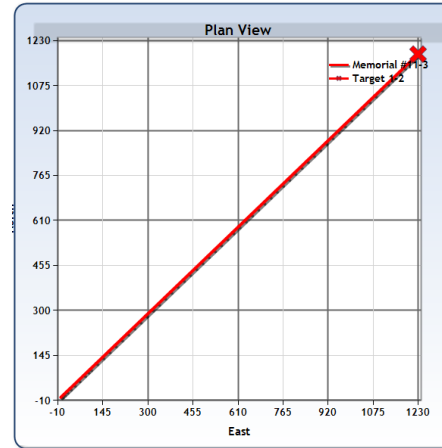
Company: Sovereign Operating Co., LLC
Well Name: Memorial #11-3
Location: SE1/4 NE1/4 Sec. 4 T1S R68W
Info:
Info:
Vertical Section Calculated on an Azimuth of: 46.0800
Survey Calculation method: Minimum Curvature
File Name: Memorial 11-3 Surveys.sr6



#	Depth Feet	Inc Degrees	Azimuth Degrees	TVD Feet	North Feet	East Feet	SubSea Feet	Section Feet	Dogleg /100 ft	BldRate /100 ft	Trnrate /100 ft	Comment
0	0.00	0.00	46.08	0.00	0.00	0.00	5224.00	0.00	0.00	0.00	0.00	
1	1100.00	0.00	46.08	1100.00	0.00	0.00	4124.00	0.00	0.00	0.00	0.00	
2	1960.00	17.20	46.08	1947.14	88.86	92.29	3276.86	128.12	2.00	2.00	0.00	
3	6864.04	17.20	46.08	6631.86	1094.72	1136.91	-1407.86	1578.28	0.00	0.00	0.00	
4	7724.04	0.00	46.08	7479.00	1183.58	1229.20	-2255.00	1706.40	2.00	2.00	0.00	
5	8484.03	0.00	46.08	8239.00	1183.58	1229.20	-3015.00	1706.40	0.00	0.00	0.00	
6	8892.03	0.00	46.08	8647.00	1183.58	1229.20	-3423.00	1706.40	0.00	0.00	0.00	

Closure is 1706.3988 feet on an Azimuth of 46.0831

Company: Sovereign Operating Co., LLC
Well Name: Memorial #11-3
Location: SE1/4 NE1/4 Sec. 4 T1S R68W
Info:
Info:
Vertical Section Calculated on an Azimuth of: 46.0800
Survey Calculation method: Minimum Curvature
File Name: Memorial 11-3 Surveys.sr6



#	Depth	Inc	Azimuth	TVD	North	East	SubSea	Section	Dogleg	BldRate	Trnrate	Comment
	Feet	Degrees	Degrees	Feet	Feet	Feet	Feet	Feet	/100 ft	/100 ft	/100 ft	
0	0.00	0.00	46.08	0.00	0.00	0.00	5224.00	0.00	0.00	0.00	0.00	
1	100.00	0.00	46.08	100.00	0.00	0.00	5124.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	46.08	200.00	0.00	0.00	5024.00	0.00	0.00	0.00	0.00	
3	300.00	0.00	46.08	300.00	0.00	0.00	4924.00	0.00	0.00	0.00	0.00	
4	400.00	0.00	46.08	400.00	0.00	0.00	4824.00	0.00	0.00	0.00	0.00	
5	500.00	0.00	46.08	500.00	0.00	0.00	4724.00	0.00	0.00	0.00	0.00	
6	600.00	0.00	46.08	600.00	0.00	0.00	4624.00	0.00	0.00	0.00	0.00	
7	700.00	0.00	46.08	700.00	0.00	0.00	4524.00	0.00	0.00	0.00	0.00	
8	800.00	0.00	46.08	800.00	0.00	0.00	4424.00	0.00	0.00	0.00	0.00	
9	900.00	0.00	46.08	900.00	0.00	0.00	4324.00	0.00	0.00	0.00	0.00	
10	1000.00	0.00	46.08	1000.00	0.00	0.00	4224.00	0.00	0.00	0.00	0.00	
11	1100.00	0.00	46.08	1100.00	0.00	0.00	4124.00	0.00	0.00	0.00	0.00	
12	1200.00	2.00	46.08	1199.98	1.21	1.26	4024.02	1.75	2.00	2.00	0.00	
13	1300.00	4.00	46.08	1299.84	4.84	5.03	3924.16	6.98	2.00	2.00	0.00	
14	1400.00	6.00	46.08	1399.45	10.89	11.30	3824.55	15.69	2.00	2.00	0.00	
15	1500.00	8.00	46.08	1498.70	19.34	20.08	3725.30	27.88	2.00	2.00	0.00	
16	1600.00	10.00	46.08	1597.47	30.19	31.35	3626.53	43.52	2.00	2.00	0.00	



#	Depth	Inc	Azimuth	TVD	North	East	SubSea	Section	Dogleg	BldRate	Trnrate	Comment
17	1700.00	12.00	46.08	1695.62	43.42	45.10	3528.38	62.60	2.00	2.00	0.00	
18	1800.00	14.00	46.08	1793.06	59.02	61.30	3430.94	85.10	2.00	2.00	0.00	
19	1900.00	16.00	46.08	1889.64	76.98	79.94	3334.36	110.98	2.00	2.00	0.00	
20	1960.00	17.20	46.08	1947.14	88.86	92.29	3276.86	128.12	2.00	2.00	0.00	
21	2000.00	17.20	46.08	1985.35	97.07	100.81	3238.65	139.95	0.00	0.00	0.00	
22	2100.00	17.20	46.08	2080.88	117.58	122.11	3143.12	169.52	0.00	0.00	0.00	
23	2200.00	17.20	46.08	2176.41	138.09	143.41	3047.59	199.09	0.00	0.00	0.00	
24	2300.00	17.20	46.08	2271.94	158.60	164.71	2952.06	228.66	0.00	0.00	0.00	
25	2400.00	17.20	46.08	2367.46	179.11	186.01	2856.54	258.23	0.00	0.00	0.00	
26	2500.00	17.20	46.08	2462.99	199.62	207.32	2761.01	287.80	0.00	0.00	0.00	
27	2600.00	17.20	46.08	2558.52	220.13	228.62	2665.48	317.37	0.00	0.00	0.00	
28	2700.00	17.20	46.08	2654.05	240.64	249.92	2569.95	346.94	0.00	0.00	0.00	
29	2800.00	17.20	46.08	2749.57	261.15	271.22	2474.43	376.51	0.00	0.00	0.00	
30	2900.00	17.20	46.08	2845.10	281.67	292.52	2378.90	406.08	0.00	0.00	0.00	
31	3000.00	17.20	46.08	2940.63	302.18	313.82	2283.37	435.65	0.00	0.00	0.00	
32	3100.00	17.20	46.08	3036.16	322.69	335.12	2187.84	465.23	0.00	0.00	0.00	
33	3200.00	17.20	46.08	3131.69	343.20	356.42	2092.31	494.80	0.00	0.00	0.00	
34	3300.00	17.20	46.08	3227.21	363.71	377.73	1996.79	524.37	0.00	0.00	0.00	
35	3400.00	17.20	46.08	3322.74	384.22	399.03	1901.26	553.94	0.00	0.00	0.00	
36	3500.00	17.20	46.08	3418.27	404.73	420.33	1805.73	583.51	0.00	0.00	0.00	
37	3600.00	17.20	46.08	3513.80	425.24	441.63	1710.20	613.08	0.00	0.00	0.00	
38	3700.00	17.20	46.08	3609.33	445.75	462.93	1614.67	642.65	0.00	0.00	0.00	
39	3800.00	17.20	46.08	3704.85	466.26	484.23	1519.15	672.22	0.00	0.00	0.00	
40	3900.00	17.20	46.08	3800.38	486.77	505.53	1423.62	701.79	0.00	0.00	0.00	
41	4000.00	17.20	46.08	3895.91	507.28	526.83	1328.09	731.36	0.00	0.00	0.00	
42	4100.00	17.20	46.08	3991.44	527.79	548.14	1232.56	760.93	0.00	0.00	0.00	
43	4200.00	17.20	46.08	4086.96	548.30	569.44	1137.04	790.50	0.00	0.00	0.00	
44	4300.00	17.20	46.08	4182.49	568.82	590.74	1041.51	820.07	0.00	0.00	0.00	
45	4400.00	17.20	46.08	4278.02	589.33	612.04	945.98	849.65	0.00	0.00	0.00	
46	4500.00	17.20	46.08	4373.55	609.84	633.34	850.45	879.22	0.00	0.00	0.00	
47	4600.00	17.20	46.08	4469.08	630.35	654.64	754.92	908.79	0.00	0.00	0.00	
48	4700.00	17.20	46.08	4564.60	650.86	675.94	659.40	938.36	0.00	0.00	0.00	



#	Depth	Inc	Azimuth	TVD	North	East	SubSea	Section	Dogleg	BldRate	Trnrate	Comment
49	4800.00	17.20	46.08	4660.13	671.37	697.24	563.87	967.93	0.00	0.00	0.00	
50	4900.00	17.20	46.08	4755.66	691.88	718.55	468.34	997.50	0.00	0.00	0.00	
51	5000.00	17.20	46.08	4851.19	712.39	739.85	372.81	1027.07	0.00	0.00	0.00	
52	5100.00	17.20	46.08	4946.72	732.90	761.15	277.28	1056.64	0.00	0.00	0.00	
53	5200.00	17.20	46.08	5042.24	753.41	782.45	181.76	1086.21	0.00	0.00	0.00	
54	5300.00	17.20	46.08	5137.77	773.92	803.75	86.23	1115.78	0.00	0.00	0.00	
55	5400.00	17.20	46.08	5233.30	794.43	825.05	-9.30	1145.35	0.00	0.00	0.00	
56	5500.00	17.20	46.08	5328.83	814.94	846.35	-104.83	1174.92	0.00	0.00	0.00	
57	5600.00	17.20	46.08	5424.35	835.46	867.65	-200.35	1204.50	0.00	0.00	0.00	
58	5700.00	17.20	46.08	5519.88	855.97	888.96	-295.88	1234.07	0.00	0.00	0.00	
59	5800.00	17.20	46.08	5615.41	876.48	910.26	-391.41	1263.64	0.00	0.00	0.00	
60	5900.00	17.20	46.08	5710.94	896.99	931.56	-486.94	1293.21	0.00	0.00	0.00	
61	6000.00	17.20	46.08	5806.47	917.50	952.86	-582.47	1322.78	0.00	0.00	0.00	
62	6100.00	17.20	46.08	5901.99	938.01	974.16	-677.99	1352.35	0.00	0.00	0.00	
63	6200.00	17.20	46.08	5997.52	958.52	995.46	-773.52	1381.92	0.00	0.00	0.00	
64	6300.00	17.20	46.08	6093.05	979.03	1016.76	-869.05	1411.49	0.00	0.00	0.00	
65	6400.00	17.20	46.08	6188.58	999.54	1038.06	-964.58	1441.06	0.00	0.00	0.00	
66	6500.00	17.20	46.08	6284.10	1020.05	1059.37	-1060.10	1470.63	0.00	0.00	0.00	
67	6600.00	17.20	46.08	6379.63	1040.56	1080.67	-1155.63	1500.20	0.00	0.00	0.00	
68	6700.00	17.20	46.08	6475.16	1061.07	1101.97	-1251.16	1529.77	0.00	0.00	0.00	
69	6800.00	17.20	46.08	6570.69	1081.58	1123.27	-1346.69	1559.35	0.00	0.00	0.00	
70	6864.04	17.20	46.08	6631.86	1094.72	1136.91	-1407.86	1578.28	0.00	0.00	0.00	
71	6900.00	16.48	46.08	6666.28	1101.95	1144.41	-1442.28	1588.70	2.00	2.00	0.00	
72	7000.00	14.48	46.08	6762.65	1120.46	1163.64	-1538.65	1615.39	2.00	2.00	0.00	
73	7100.00	12.48	46.08	6859.89	1136.63	1180.43	-1635.89	1638.70	2.00	2.00	0.00	
74	7200.00	10.48	46.08	6957.88	1150.43	1194.77	-1733.88	1658.60	2.00	2.00	0.00	
75	7300.00	8.48	46.08	7056.51	1161.86	1206.63	-1832.51	1675.07	2.00	2.00	0.00	
76	7400.00	6.48	46.08	7155.66	1170.89	1216.01	-1931.66	1688.09	2.00	2.00	0.00	
77	7500.00	4.48	46.08	7255.19	1177.51	1222.89	-2031.19	1697.64	2.00	2.00	0.00	
78	7600.00	2.48	46.08	7355.00	1181.72	1227.26	-2131.00	1703.71	2.00	2.00	0.00	
79	7700.00	0.48	46.08	7454.97	1183.51	1229.13	-2230.97	1706.30	2.00	2.00	0.00	
80	7724.04	0.00	46.08	7479.00	1183.58	1229.20	-2255.00	1706.40	2.00	2.00	0.00	



#	Depth	Inc	Azimuth	TVD	North	East	SubSea	Section	Dogleg	BldRate	Trnrate	Comment
81	7800.00	0.00	46.08	7554.97	1183.58	1229.20	-2330.97	1706.40	0.00	0.00	0.00	
82	7900.00	0.00	46.08	7654.97	1183.58	1229.20	-2430.97	1706.40	0.00	0.00	0.00	
83	8000.00	0.00	46.08	7754.97	1183.58	1229.20	-2530.97	1706.40	0.00	0.00	0.00	
84	8100.00	0.00	46.08	7854.97	1183.58	1229.20	-2630.97	1706.40	0.00	0.00	0.00	
85	8200.00	0.00	46.08	7954.97	1183.58	1229.20	-2730.97	1706.40	0.00	0.00	0.00	
86	8300.00	0.00	46.08	8054.97	1183.58	1229.20	-2830.97	1706.40	0.00	0.00	0.00	
87	8400.00	0.00	46.08	8154.97	1183.58	1229.20	-2930.97	1706.40	0.00	0.00	0.00	
88	8484.03	0.00	46.08	8239.00	1183.58	1229.20	-3015.00	1706.40	0.00	0.00	0.00	
89	8500.00	0.00	46.08	8254.97	1183.58	1229.20	-3030.97	1706.40	0.00	0.00	0.00	
90	8600.00	0.00	46.08	8354.97	1183.58	1229.20	-3130.97	1706.40	0.00	0.00	0.00	
91	8700.00	0.00	46.08	8454.97	1183.58	1229.20	-3230.97	1706.40	0.00	0.00	0.00	
92	8800.00	0.00	46.08	8554.97	1183.58	1229.20	-3330.97	1706.40	0.00	0.00	0.00	
93	8892.03	0.00	46.08	8647.00	1183.58	1229.20	-3423.00	1706.40	0.00	0.00	0.00	

Closure is 1706.3988 feet on an Azimuth of 46.0831