



Shubert 1-31H  
 Sam Gary and Associates  
 HWD 5  
 Trego Co, Kansas  
 Minimum Curvature Calculation

MWD George Hunt / Brian Slater  
 DIRECTIONAL DRILLERS: Chris Moon / Mike Foster  
 Magnetic Declination: **6.65 grid**  
 Job #: DR1305064  
 Vertical Section Azimuth **182.05**

No.	Survey Depth	INC	AZM	TVD	N-S	E-W	Vertical Section	DLS/ 100	BUR	WR
<b>Tie</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	
1	507	0.22	191.13	507.00	-0.96	-0.19	0.96	0.04	0.04	33.31
2	687	0.40	209.15	687.00	-1.84	-0.56	1.86	0.11	0.10	10.01
3	777	0.70	220.14	776.99	-2.54	-1.07	2.57	0.35	0.33	12.21
4	1043	0.22	173.25	1042.98	-4.29	-2.06	4.36	0.22	-0.18	-17.63
5	1137	0.22	202.47	1136.98	-4.63	-2.10	4.71	0.12	0.00	31.09
6	1227	0.31	176.85	1226.98	-5.04	-2.16	5.11	0.16	0.10	-28.47
7	1313	0.22	250.63	1312.98	-5.32	-2.30	5.40	0.38	-0.10	85.79
8	1407	0.62	290.14	1406.98	-5.21	-2.95	5.31	0.50	0.43	42.03
9	1497	1.10	306.84	1496.97	-4.52	-4.10	4.67	0.60	0.53	18.56
10	1579	1.32	313.04	1578.95	-3.41	-5.42	3.60	0.31	0.27	7.56
11	1714	1.49	319.45	1713.91	-1.01	-7.69	1.28	0.17	0.13	4.75
12	1804	1.41	317.43	1803.88	0.69	-9.20	-0.36	0.11	-0.09	-2.24
13	1984	1.19	320.33	1983.83	3.76	-11.89	-3.34	0.13	-0.12	1.61
14	2074	1.32	312.47	2073.81	5.18	-13.26	-4.71	0.24	0.14	-8.73
15	2253	1.71	298.36	2252.75	7.84	-17.13	-7.23	0.30	0.22	-7.88
16	2343	1.58	302.05	2342.71	9.14	-19.36	-8.44	0.19	-0.14	4.10
17	2429	1.58	304.47	2428.68	10.44	-21.34	-9.67	0.08	0.00	2.81
18	2519	2.42	299.15	2518.62	12.07	-24.02	-11.20	0.95	0.93	-5.91
19	2609	2.42	298.93	2608.54	13.91	-27.35	-12.93	0.01	0.00	-0.24
20	2695	2.42	298.45	2694.47	15.66	-30.53	-14.55	0.02	0.00	-0.56
21	2744	2.42	297.74	2743.42	16.63	-32.36	-15.46	0.06	0.00	-1.45
22	2861	2.50	297.57	2860.32	18.96	-36.81	-17.63	0.07	0.07	-0.15
23	2951	2.81	292.47	2950.22	20.71	-40.58	-19.25	0.43	0.34	-5.67
24	3037	2.81	289.35	3036.12	22.22	-44.52	-20.61	0.18	0.00	-3.63
25	3107	3.40	240.50	3106.02	21.76	-47.95	-20.03	3.75	0.84	-69.79
26	3149	6.70	208.00	3147.86	18.99	-50.18	-17.18	10.10	7.86	-77.38
27	3194	10.90	207.80	3192.32	12.90	-53.40	-10.98	9.33	9.33	-0.44
28	3239	15.20	203.00	3236.15	3.70	-57.69	-1.64	9.85	9.56	-10.67
29	3284	18.80	194.30	3279.19	-8.76	-61.79	10.96	9.77	8.00	-19.33
30	3329	21.20	187.80	3321.47	-23.85	-64.69	26.15	7.26	5.33	-14.44
31	3374	22.80	182.80	3363.20	-40.62	-66.22	42.97	5.47	3.56	-11.11
32	3415	26.00	179.30	3400.54	-57.55	-66.50	59.89	8.56	7.80	-8.54
33	3457	29.20	179.00	3437.75	-77.00	-66.20	79.32	7.63	7.62	-0.71
34	3502	32.70	176.40	3476.34	-100.12	-65.25	102.39	8.32	7.78	-5.78
35	3547	36.40	174.50	3513.40	-125.55	-63.20	127.73	8.56	8.22	-4.22
36	3592	39.10	176.80	3548.98	-153.01	-61.13	155.10	6.77	6.00	5.11
37	3636	42.60	178.30	3582.26	-181.76	-59.92	183.79	8.26	7.95	3.41
38	3681	45.10	179.00	3614.71	-212.93	-59.19	214.91	5.66	5.56	1.56
39	3726	48.40	182.30	3645.54	-245.69	-59.58	247.66	9.07	7.33	7.33
40	3770	53.00	177.30	3673.41	-279.71	-59.42	281.65	13.66	10.45	-11.36



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41	3815	57.20	178.00	3699.15	-316.57	-57.91	318.44	9.42	9.33	1.56
42	3857	60.20	178.80	3720.97	-352.44	-56.91	354.25	7.33	7.14	1.90
43	3902	61.50	178.40	3742.89	-391.73	-55.95	393.48	2.99	2.89	-0.89
44	3947	61.50	178.10	3764.36	-431.26	-54.74	432.94	0.59	0.00	-0.67
45	3992	61.70	177.90	3785.76	-470.82	-53.36	472.43	0.59	0.44	-0.44