



Gyroscopic Survey Report
for
KPK

Well Location	WELD COUNTY
Well Name	STEIBER #24-24
Rig Number	KPK
Survey Date	9/15/2014
Latitude	40.0317100°N
Longitude	104.8412600°W
North Reference	True North
Grid Correction	None
Depth Reference	GL (0.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 239.46Azim (deg)
Definitive Survey	STEIBER #24-24
Operator(s)	C KIRBY

Well Notes

Survey Report

Well Name: STEIBER #24-24
Survey: STEIBER #24-24
Survey Date: 9/15/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
87.05	0.33	258.17	87.05	0.24	-0.05	-0.25	0.38	0.25	258.17
108.55	0.17	218.47	108.55	0.33	-0.09	-0.33	1.07	0.34	254.81
136.65	0.29	247.17	136.65	0.43	-0.15	-0.42	0.58	0.44	250.48
160.19	0.35	259.52	160.19	0.56	-0.18	-0.54	0.39	0.57	251.27
182.97	0.21	264.15	182.97	0.66	-0.20	-0.65	0.63	0.68	252.88
211.12	0.08	336.49	211.12	0.71	-0.19	-0.71	0.70	0.73	255.09
234.65	0.15	27.95	234.65	0.68	-0.15	-0.70	0.49	0.72	258.06
257.37	0.17	20.34	257.37	0.63	-0.09	-0.68	0.15	0.68	262.34
285.53	0.14	23.68	285.53	0.57	-0.02	-0.65	0.10	0.65	268.33
308.32	0.10	38.06	308.31	0.53	0.02	-0.62	0.24	0.62	272.11
336.47	0.07	6.51	336.47	0.49	0.06	-0.61	0.19	0.61	275.67
359.93	0.01	53.71	359.93	0.48	0.08	-0.60	0.28	0.61	277.28
382.70	0.04	49.34	382.69	0.47	0.08	-0.59	0.11	0.60	278.01
410.70	0.08	188.91	410.70	0.47	0.07	-0.59	0.39	0.59	276.88
433.45	0.01	334.48	433.45	0.48	0.06	-0.59	0.38	0.60	275.59
461.56	0.07	7.85	461.56	0.47	0.08	-0.59	0.23	0.60	277.53
484.91	0.11	342.92	484.91	0.46	0.11	-0.60	0.22	0.61	280.84
511.80	0.03	42.31	511.80	0.44	0.14	-0.60	0.36	0.62	283.44
534.88	0.03	280.92	534.88	0.44	0.15	-0.60	0.20	0.62	283.86
557.21	0.06	291.76	557.21	0.45	0.15	-0.62	0.15	0.64	283.98
584.90	0.05	53.51	584.90	0.45	0.17	-0.62	0.35	0.64	285.03
608.03	0.09	359.52	608.03	0.43	0.19	-0.61	0.33	0.64	287.42
634.84	0.07	352.74	634.84	0.41	0.23	-0.61	0.10	0.65	290.56
657.94	0.10	32.67	657.94	0.39	0.26	-0.60	0.29	0.66	293.44
684.73	0.12	24.45	684.73	0.34	0.31	-0.58	0.08	0.66	297.99
707.99	0.10	21.67	707.99	0.31	0.35	-0.56	0.08	0.66	301.87
735.65	0.09	12.31	735.64	0.27	0.39	-0.55	0.07	0.67	305.64
758.02	0.09	33.07	758.02	0.25	0.42	-0.53	0.14	0.68	308.41
785.66	0.11	43.03	785.66	0.20	0.46	-0.51	0.09	0.68	312.31
808.76	0.29	31.99	808.76	0.13	0.53	-0.46	0.80	0.70	318.75
835.51	0.22	18.77	835.51	0.03	0.63	-0.41	0.35	0.75	327.02
858.44	0.22	47.58	858.44	-0.04	0.70	-0.36	0.48	0.79	332.70
885.44	0.21	36.90	885.43	-0.14	0.78	-0.29	0.16	0.83	339.31
908.31	0.20	37.83	908.31	-0.22	0.84	-0.24	0.06	0.87	343.82
935.86	0.23	43.06	935.86	-0.31	0.92	-0.18	0.13	0.93	349.07

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
958.23	0.26	46.78	958.23	-0.41	0.98	-0.11	0.15	0.99	353.61
985.66	0.21	45.40	985.66	-0.51	1.06	-0.03	0.19	1.06	358.37
1007.95	0.24	33.79	1007.95	-0.59	1.13	0.02	0.26	1.13	1.25
1035.31	0.20	37.48	1035.31	-0.69	1.21	0.09	0.18	1.22	4.03
1058.34	0.18	341.38	1058.34	-0.73	1.28	0.10	0.77	1.28	4.38
1085.16	0.15	61.54	1085.16	-0.78	1.34	0.12	0.80	1.34	4.94
1108.07	0.12	6.10	1108.06	-0.82	1.37	0.14	0.56	1.38	6.01
1135.10	0.16	50.96	1135.10	-0.88	1.43	0.18	0.42	1.44	7.09
1161.65	0.15	2.81	1161.64	-0.93	1.48	0.21	0.48	1.50	7.98
1184.41	0.15	15.43	1184.40	-0.97	1.54	0.22	0.15	1.56	8.03
1210.97	0.14	355.36	1210.97	-1.01	1.61	0.22	0.20	1.62	7.94
1233.74	0.15	332.23	1233.73	-1.02	1.66	0.21	0.25	1.67	7.16
1260.89	0.13	324.98	1260.88	-1.02	1.72	0.17	0.08	1.73	5.79
1282.94	0.08	336.88	1282.94	-1.02	1.75	0.15	0.27	1.76	5.01
1310.17	0.04	51.49	1310.17	-1.03	1.77	0.15	0.28	1.78	4.95
1336.69	0.03	305.96	1336.69	-1.04	1.78	0.16	0.21	1.79	4.99
1359.31	0.05	341.49	1359.30	-1.04	1.80	0.15	0.13	1.80	4.71
1385.07	0.12	289.35	1385.06	-1.02	1.82	0.12	0.40	1.82	3.73
1407.80	0.13	259.14	1407.79	-0.98	1.82	0.07	0.29	1.82	2.20
1435.00	0.11	270.45	1434.99	-0.93	1.81	0.01	0.12	1.81	0.42
1461.33	0.14	274.61	1461.33	-0.89	1.82	-0.04	0.11	1.82	358.62
1484.18	0.20	287.42	1484.17	-0.84	1.83	-0.11	0.32	1.83	356.58
1511.23	0.21	274.61	1511.22	-0.76	1.85	-0.20	0.17	1.86	353.69
1533.19	0.19	273.28	1533.19	-0.70	1.85	-0.28	0.09	1.88	351.39
1560.35	0.23	274.06	1560.35	-0.62	1.86	-0.38	0.16	1.90	348.43
1582.34	0.22	263.91	1582.34	-0.54	1.86	-0.47	0.20	1.92	345.90
1609.49	0.32	263.52	1609.48	-0.43	1.85	-0.59	0.39	1.94	342.17
1636.52	0.25	268.36	1636.52	-0.30	1.84	-0.73	0.27	1.97	338.33
1658.46	0.32	267.85	1658.45	-0.21	1.83	-0.84	0.28	2.01	335.41
1685.57	0.38	265.55	1685.56	-0.06	1.82	-1.00	0.23	2.08	331.19
1707.49	0.32	256.96	1707.48	0.06	1.80	-1.13	0.36	2.13	327.83
1734.09	0.33	258.94	1734.08	0.20	1.77	-1.28	0.07	2.19	324.10
1760.68	0.39	264.08	1760.67	0.36	1.75	-1.45	0.25	2.27	320.34
1786.83	0.41	265.54	1786.82	0.53	1.73	-1.63	0.09	2.38	316.69
1808.92	0.46	266.73	1808.91	0.68	1.72	-1.80	0.20	2.49	313.71
1835.90	0.50	267.28	1835.89	0.88	1.71	-2.02	0.18	2.65	310.15

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
1861.80	0.54	269.46	1861.78	1.08	1.70	-2.26	0.17	2.83	306.95
1884.12	0.56	270.78	1884.10	1.27	1.70	-2.48	0.10	3.00	304.48
1910.83	0.54	269.61	1910.82	1.49	1.70	-2.73	0.09	3.22	301.90
1936.67	0.50	269.80	1936.66	1.69	1.70	-2.97	0.14	3.42	299.80
1958.99	0.54	267.94	1958.98	1.87	1.70	-3.17	0.17	3.60	298.13
1985.69	0.60	272.02	1985.67	2.10	1.70	-3.44	0.27	3.83	296.27
2011.65	0.55	269.86	2011.63	2.32	1.70	-3.70	0.21	4.07	294.71
2033.96	0.61	271.97	2033.94	2.51	1.71	-3.92	0.29	4.28	293.49
2059.95	0.60	271.30	2059.92	2.75	1.71	-4.20	0.04	4.53	292.20
2086.36	0.63	272.68	2086.33	2.98	1.72	-4.48	0.10	4.80	291.03
2108.76	0.64	271.19	2108.74	3.19	1.73	-4.73	0.11	5.04	290.11
2134.49	0.64	271.88	2134.47	3.44	1.74	-5.02	0.05	5.31	289.12
2161.27	0.69	279.47	2161.24	3.69	1.77	-5.32	0.38	5.61	288.39
2182.96	0.81	279.90	2182.93	3.90	1.82	-5.60	0.57	5.89	287.98
2209.47	0.75	285.31	2209.44	4.17	1.90	-5.96	0.35	6.25	287.66
2235.41	0.77	289.69	2235.38	4.40	2.00	-6.29	0.23	6.60	287.65
2261.91	0.82	297.76	2261.88	4.61	2.15	-6.62	0.46	6.96	287.98
2284.15	0.85	297.81	2284.11	4.78	2.30	-6.91	0.14	7.28	288.41
2309.36	0.86	294.13	2309.32	4.99	2.46	-7.25	0.22	7.65	288.78
2335.67	0.71	297.83	2335.62	5.19	2.62	-7.57	0.58	8.01	289.10
2361.74	0.69	305.40	2361.69	5.34	2.79	-7.84	0.36	8.32	289.57
2382.92	0.64	310.44	2382.87	5.43	2.94	-8.04	0.39	8.56	290.09
2409.11	0.61	309.70	2409.06	5.52	3.12	-8.25	0.12	8.83	290.72
2435.29	0.60	308.78	2435.24	5.62	3.30	-8.47	0.05	9.09	291.27
2459.96	0.68	309.29	2459.90	5.71	3.47	-8.68	0.33	9.35	291.78
2486.01	0.64	307.35	2485.95	5.82	3.65	-8.91	0.18	9.63	292.29
2511.49	0.58	313.13	2511.43	5.91	3.83	-9.12	0.32	9.89	292.77
2533.36	0.57	307.64	2533.30	5.98	3.97	-9.29	0.26	10.10	293.14
2559.56	0.51	324.00	2559.50	6.04	4.14	-9.46	0.63	10.33	293.66
2584.92	0.43	337.37	2584.86	6.04	4.32	-9.56	0.54	10.50	294.33
2611.10	0.44	340.79	2611.04	6.01	4.51	-9.64	0.11	10.64	295.09
2632.87	0.42	2.93	2632.81	5.95	4.67	-9.66	0.77	10.73	295.81
2658.49	0.47	16.04	2658.43	5.82	4.87	-9.62	0.44	10.78	296.82
2684.57	0.39	15.27	2684.51	5.68	5.06	-9.57	0.30	10.82	297.84
2710.75	0.46	26.55	2710.69	5.52	5.24	-9.50	0.40	10.85	298.86
2736.11	0.62	30.02	2736.05	5.32	5.44	-9.39	0.64	10.85	300.11

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
2757.98	0.64	53.27	2757.92	5.10	5.62	-9.23	1.16	10.81	301.33
2786.13	0.72	50.78	2786.06	4.77	5.82	-8.97	0.30	10.69	303.00
2809.66	0.85	59.12	2809.59	4.45	6.01	-8.71	0.75	10.58	304.61
2833.93	0.87	65.21	2833.86	4.08	6.18	-8.38	0.38	10.41	306.38
2857.43	0.89	57.83	2857.36	3.72	6.35	-8.07	0.49	10.27	308.19
2886.10	1.02	66.84	2886.03	3.25	6.57	-7.65	0.70	10.08	310.66
2909.46	1.02	65.75	2909.38	2.84	6.73	-7.27	0.09	9.91	312.82
2933.23	1.06	68.46	2933.14	2.41	6.90	-6.87	0.27	9.74	315.13
2961.69	1.06	64.66	2961.60	1.89	7.11	-6.39	0.25	9.56	318.06
2984.73	1.10	68.04	2984.64	1.46	7.28	-5.99	0.32	9.43	320.55
3009.29	1.27	74.66	3009.19	0.97	7.44	-5.51	0.90	9.26	323.48
3036.23	1.24	72.07	3036.12	0.39	7.61	-4.95	0.23	9.08	326.98
3059.99	1.26	71.31	3059.88	-0.11	7.77	-4.45	0.12	8.96	330.20
3082.99	1.27	78.81	3082.87	-0.60	7.90	-3.96	0.72	8.84	333.37
3111.44	1.22	81.36	3111.32	-1.18	8.01	-3.36	0.26	8.69	337.27
3135.22	1.05	86.24	3135.09	-1.61	8.06	-2.89	0.80	8.57	340.28
3157.95	1.21	90.99	3157.82	-2.00	8.07	-2.44	0.83	8.43	343.18
3186.31	1.19	96.39	3186.17	-2.49	8.03	-1.85	0.41	8.24	347.05
3210.07	1.28	99.67	3209.92	-2.89	7.96	-1.34	0.48	8.08	350.44
3233.06	1.26	103.66	3232.91	-3.27	7.86	-0.84	0.39	7.90	353.88
3261.35	1.30	101.87	3261.19	-3.73	7.72	-0.23	0.18	7.72	358.32
3284.33	1.30	105.55	3284.16	-4.10	7.60	0.28	0.36	7.60	2.10
3308.06	1.38	107.30	3307.89	-4.48	7.44	0.81	0.39	7.48	6.21
3335.70	1.25	111.25	3335.53	-4.89	7.23	1.41	0.56	7.37	11.03
3359.37	1.14	113.00	3359.19	-5.19	7.05	1.87	0.50	7.29	14.84
3382.66	1.14	121.37	3382.47	-5.43	6.84	2.28	0.71	7.21	18.42
3410.22	1.17	128.43	3410.03	-5.66	6.52	2.73	0.53	7.07	22.73
3433.90	1.12	129.20	3433.71	-5.83	6.22	3.10	0.22	6.95	26.48
3456.81	1.04	138.39	3456.61	-5.95	5.92	3.41	0.83	6.84	29.93
3485.12	1.00	146.87	3484.91	-6.01	5.53	3.72	0.55	6.66	33.93
3508.52	0.97	150.39	3508.31	-6.02	5.18	3.93	0.29	6.50	37.14
3535.55	0.89	163.86	3535.33	-5.96	4.78	4.10	0.85	6.30	40.57
3559.68	0.93	171.80	3559.46	-5.84	4.41	4.18	0.55	6.07	43.45
3585.94	0.93	178.80	3585.72	-5.65	3.99	4.21	0.43	5.80	46.58
3609.23	0.95	181.99	3609.00	-5.46	3.60	4.21	0.25	5.54	49.43
3632.50	1.00	188.93	3632.27	-5.22	3.21	4.17	0.55	5.26	52.43

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3659.60	1.07	193.83	3659.37	-4.89	2.73	4.07	0.42	4.90	56.20
3682.86	1.04	199.10	3682.63	-4.58	2.32	3.95	0.44	4.58	59.63
3710.67	1.21	201.30	3710.43	-4.16	1.80	3.76	0.64	4.17	64.40
3733.17	1.13	202.54	3732.92	-3.79	1.38	3.59	0.38	3.84	69.04
3760.85	1.24	209.54	3760.60	-3.31	0.86	3.34	0.65	3.45	75.51
3783.43	1.27	211.06	3783.17	-2.88	0.44	3.09	0.19	3.12	81.95
3811.05	1.33	212.16	3810.79	-2.33	-0.10	2.76	0.25	2.76	91.98
3833.50	1.38	217.00	3833.23	-1.85	-0.53	2.46	0.56	2.52	102.19
3861.22	1.39	218.23	3860.95	-1.23	-1.06	2.05	0.12	2.31	117.40
3884.25	1.34	220.40	3883.96	-0.71	-1.49	1.70	0.34	2.26	131.11
3911.35	1.31	223.37	3911.06	-0.12	-1.95	1.29	0.27	2.34	146.61
3934.24	1.41	229.06	3933.94	0.41	-2.33	0.89	0.74	2.49	158.98
3957.62	1.27	231.69	3957.32	0.95	-2.68	0.47	0.64	2.72	169.98
3984.57	1.36	240.47	3984.26	1.57	-3.02	-0.04	0.81	3.02	180.76
4007.70	1.35	239.47	4007.38	2.12	-3.29	-0.51	0.10	3.33	188.87
4034.49	1.43	244.32	4034.17	2.77	-3.60	-1.09	0.52	3.76	196.81
4057.59	1.41	245.77	4057.26	3.34	-3.84	-1.61	0.17	4.16	202.70
4084.94	1.41	246.19	4084.60	4.01	-4.12	-2.22	0.04	4.68	208.37
4111.21	1.38	246.29	4110.86	4.64	-4.37	-2.81	0.13	5.20	212.71
4133.92	1.48	250.87	4133.56	5.20	-4.58	-3.34	0.66	5.67	216.07
4160.35	1.50	248.03	4159.98	5.88	-4.82	-3.98	0.30	6.25	219.54
4182.69	1.53	247.43	4182.32	6.46	-5.05	-4.53	0.12	6.78	221.90
4209.81	1.59	252.08	4209.43	7.19	-5.30	-5.22	0.53	7.44	224.56
4235.35	1.76	253.22	4234.96	7.91	-5.52	-5.93	0.65	8.10	227.04
4258.14	1.88	250.11	4257.73	8.62	-5.75	-6.62	0.71	8.77	229.01
4284.27	1.90	252.11	4283.85	9.47	-6.03	-7.43	0.27	9.57	230.95
4311.24	1.94	245.06	4310.80	10.36	-6.36	-8.27	0.89	10.44	232.45
4334.09	1.97	243.91	4333.64	11.13	-6.70	-8.98	0.22	11.20	233.28
4360.04	1.81	246.37	4359.58	11.99	-7.06	-9.75	0.70	12.04	234.12
4382.88	1.90	246.48	4382.41	12.72	-7.35	-10.43	0.43	12.76	234.82
4409.89	1.87	238.38	4409.41	13.60	-7.76	-11.22	1.00	13.64	235.32
4435.88	1.77	233.10	4435.38	14.43	-8.22	-11.90	0.75	14.46	235.35
4458.33	1.83	232.25	4457.82	15.13	-8.65	-12.46	0.29	15.17	235.22
4484.43	2.02	233.93	4483.91	16.00	-9.18	-13.16	0.75	16.04	235.11
4511.31	2.13	233.41	4510.76	16.96	-9.75	-13.94	0.43	17.01	235.03
4533.72	2.34	238.89	4533.16	17.84	-10.24	-14.67	1.34	17.89	235.09

Well Name: STEIBER #24-24
Survey: STEIBER #24-24
Survey Date: 9/15/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
4559.67	2.33	241.07	4559.08	18.89	-10.77	-15.58	0.35	18.94	235.36
4586.41	2.37	242.27	4585.80	19.99	-11.29	-16.55	0.23	20.03	235.70
4607.97	2.31	245.78	4607.35	20.86	-11.67	-17.34	0.71	20.90	236.05
4634.67	2.19	245.93	4634.02	21.90	-12.10	-18.29	0.47	21.93	236.52
4660.80	2.31	251.89	4660.14	22.91	-12.47	-19.25	1.01	22.93	237.07
4685.48	2.12	246.55	4684.80	23.85	-12.80	-20.14	1.13	23.86	237.56
4711.79	2.18	255.27	4711.09	24.81	-13.12	-21.07	1.26	24.82	238.08
4733.83	1.84	251.27	4733.12	25.56	-13.34	-21.81	1.64	25.57	238.54
4761.09	1.91	254.17	4760.36	26.43	-13.61	-22.66	0.42	26.43	239.02
4788.71	1.97	250.35	4787.96	27.34	-13.89	-23.55	0.52	27.34	239.46