



Gyroscopic Survey Report
for
KPKAUFFMAN

Well Location	WELD
Well Name	WALTERHUNZKIER #2
Rig Number	
Survey Date	11/26/2014
Latitude	40.1033330°N
Longitude	104.8886930°W
North Reference	True North
Grid Correction	None
Depth Reference	GL (5038.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 308.32Azim (deg)
Definitive Survey	WALTER HUNZKIER #2
Operator(s)	T CELLAN

Well Notes

API-05-123-09718

Well Name: WALTERHUNZKIER #2
Survey: WALTER HUNZKIER #2
Survey Date: 11/26/2014

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Distance	Closure Direction	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	%/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
89.42	0.16	101.80	89.42	-0.11	-0.03	0.13	0.13	101.80	0.18
99.50	0.24	118.02	99.49	-0.15	-0.04	0.16	0.16	103.89	0.95
124.32	0.43	129.85	124.32	-0.29	-0.12	0.28	0.30	114.08	0.80
148.85	0.17	107.28	148.85	-0.42	-0.19	0.38	0.43	116.85	1.13
171.72	0.17	97.19	171.72	-0.48	-0.21	0.45	0.49	114.84	0.13
199.06	0.17	96.33	199.05	-0.55	-0.22	0.53	0.57	112.30	0.02
221.11	0.08	105.84	221.11	-0.59	-0.22	0.58	0.62	111.31	0.43
248.47	0.15	129.40	248.46	-0.64	-0.25	0.62	0.67	112.09	0.30
270.66	0.21	132.05	270.66	-0.71	-0.30	0.67	0.73	113.81	0.27
297.99	0.16	161.51	297.99	-0.79	-0.37	0.72	0.81	116.96	0.38
320.05	0.12	162.09	320.05	-0.84	-0.42	0.74	0.85	119.56	0.21
347.51	0.14	158.25	347.51	-0.89	-0.48	0.76	0.90	122.16	0.09
374.83	0.13	164.82	374.83	-0.95	-0.54	0.78	0.95	124.61	0.08
399.10	0.14	163.60	399.10	-0.99	-0.59	0.80	0.99	126.72	0.08
421.27	0.15	146.17	421.27	-1.04	-0.64	0.82	1.04	128.18	0.21
449.23	0.21	132.57	449.23	-1.13	-0.71	0.88	1.13	128.96	0.25
472.30	0.15	152.54	472.30	-1.20	-0.77	0.92	1.20	129.66	0.36
498.54	0.12	142.98	498.54	-1.26	-0.82	0.96	1.26	130.57	0.14
522.40	0.08	144.73	522.39	-1.30	-0.85	0.98	1.30	130.98	0.19
549.54	0.28	144.23	549.54	-1.38	-0.92	1.03	1.38	131.78	0.73
572.48	0.22	157.93	572.48	-1.47	-1.00	1.08	1.47	133.00	0.35
598.96	0.20	166.34	598.96	-1.55	-1.10	1.11	1.56	134.72	0.14
621.88	0.24	147.27	621.87	-1.63	-1.18	1.14	1.64	135.82	0.37
649.93	0.27	164.07	649.93	-1.74	-1.29	1.19	1.76	137.22	0.29
671.93	0.19	158.49	671.92	-1.81	-1.37	1.22	1.84	138.38	0.37
699.32	0.21	154.99	699.32	-1.89	-1.46	1.26	1.93	139.27	0.07
721.19	0.19	130.52	721.19	-1.97	-1.52	1.30	2.00	139.42	0.39
749.36	0.27	135.20	749.36	-2.08	-1.60	1.38	2.11	139.09	0.28
772.00	0.30	156.25	772.00	-2.18	-1.69	1.45	2.22	139.45	0.48
799.92	0.26	167.83	799.91	-2.30	-1.82	1.49	2.35	140.70	0.24
822.04	0.32	156.89	822.03	-2.39	-1.92	1.52	2.45	141.64	0.34
849.39	0.39	179.92	849.38	-2.51	-2.09	1.55	2.60	143.36	0.58
871.15	0.43	191.73	871.15	-2.59	-2.24	1.54	2.72	145.57	0.42
898.04	0.38	190.22	898.04	-2.68	-2.43	1.50	2.85	148.27	0.20
920.43	0.29	182.53	920.42	-2.75	-2.56	1.48	2.96	149.85	0.43

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MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Distance	Closure Direction	DLS
ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft
946.43	0.43	188.45	946.42	-2.84	-2.72	1.47	3.09	151.64	0.57
973.22	0.49	186.79	973.21	-2.95	-2.93	1.44	3.27	153.86	0.21
996.35	0.45	195.74	996.34	-3.03	-3.12	1.40	3.42	155.78	0.35
1023.14	0.52	193.09	1023.13	-3.13	-3.34	1.35	3.60	158.04	0.27
1049.77	0.45	185.05	1049.76	-3.23	-3.56	1.31	3.79	159.80	0.38
1072.27	0.48	177.97	1072.26	-3.34	-3.74	1.31	3.96	160.77	0.30
1099.16	0.55	184.85	1099.15	-3.49	-3.98	1.30	4.19	161.95	0.34
1120.74	0.47	196.71	1120.73	-3.58	-4.17	1.26	4.36	163.14	0.62
1147.63	0.49	191.91	1147.61	-3.67	-4.39	1.21	4.55	164.61	0.17
1173.49	0.51	192.87	1173.47	-3.77	-4.61	1.16	4.75	165.87	0.07
1196.09	0.51	196.07	1196.07	-3.85	-4.80	1.11	4.93	166.99	0.13
1222.69	0.46	182.11	1222.68	-3.96	-5.03	1.07	5.14	167.95	0.48
1248.66	0.37	198.39	1248.64	-4.05	-5.21	1.04	5.31	168.69	0.58
1271.12	0.45	222.60	1271.10	-4.07	-5.35	0.96	5.43	169.82	0.84
1298.50	0.39	209.06	1298.48	-4.07	-5.50	0.84	5.57	171.30	0.43
1320.19	0.42	205.00	1320.17	-4.10	-5.64	0.77	5.69	172.19	0.19
1348.27	0.44	211.97	1348.25	-4.14	-5.82	0.67	5.86	173.40	0.20
1370.87	0.47	216.50	1370.85	-4.15	-5.97	0.57	6.00	174.52	0.23
1397.58	0.53	211.16	1397.56	-4.17	-6.17	0.44	6.18	175.90	0.29
1424.96	0.58	207.39	1424.93	-4.21	-6.40	0.31	6.41	177.20	0.22
1446.63	0.55	202.02	1446.60	-4.26	-6.59	0.22	6.60	178.07	0.28
1473.20	0.50	210.83	1473.18	-4.32	-6.81	0.12	6.81	179.03	0.37
1499.97	0.39	219.59	1499.95	-4.33	-6.98	0.00	6.98	180.02	0.49
1521.50	0.39	227.75	1521.48	-4.32	-7.09	-0.10	7.09	180.83	0.26
1547.93	0.39	230.03	1547.90	-4.28	-7.21	-0.24	7.21	181.89	0.06
1574.12	0.38	240.25	1574.09	-4.23	-7.31	-0.38	7.32	182.98	0.27
1596.55	0.36	237.19	1596.52	-4.18	-7.38	-0.50	7.40	183.91	0.10
1623.38	0.42	224.75	1623.35	-4.14	-7.50	-0.64	7.52	184.92	0.37
1649.00	0.42	231.85	1648.97	-4.11	-7.62	-0.78	7.66	185.88	0.20
1672.32	0.47	243.56	1672.29	-4.05	-7.72	-0.94	7.77	186.93	0.44
1698.79	0.52	230.63	1698.76	-3.98	-7.84	-1.13	7.92	188.18	0.46
1724.20	0.50	246.72	1724.16	-3.90	-7.96	-1.32	8.07	189.41	0.57
1746.22	0.53	240.72	1746.19	-3.82	-8.05	-1.50	8.18	190.54	0.27
1772.44	0.50	251.73	1772.41	-3.71	-8.14	-1.71	8.32	191.87	0.39
1798.04	0.51	249.08	1798.01	-3.59	-8.22	-1.93	8.44	193.19	0.10
1824.27	0.50	245.92	1824.23	-3.47	-8.31	-2.14	8.58	194.44	0.12

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ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft
1846.94	0.51	243.62	1846.90	-3.38	-8.39	-2.32	8.71	195.45	0.10
1873.77	0.55	245.09	1873.73	-3.27	-8.50	-2.54	8.87	196.65	0.16
1899.21	0.52	234.12	1899.17	-3.19	-8.62	-2.75	9.04	197.68	0.41
1920.97	0.57	245.08	1920.93	-3.11	-8.72	-2.92	9.20	198.54	0.52
1946.53	0.58	237.10	1946.48	-3.01	-8.84	-3.15	9.39	199.60	0.32
1972.70	0.54	235.52	1972.66	-2.94	-8.99	-3.36	9.59	200.51	0.18
1999.01	0.66	242.29	1998.97	-2.84	-9.13	-3.60	9.81	201.51	0.54
2024.30	0.66	250.74	2024.25	-2.70	-9.24	-3.86	10.02	202.69	0.39
2046.41	0.68	256.64	2046.36	-2.55	-9.31	-4.11	10.18	203.82	0.32
2072.45	0.77	258.85	2072.40	-2.34	-9.38	-4.43	10.38	205.29	0.37
2097.84	0.71	258.11	2097.79	-2.13	-9.45	-4.76	10.58	206.71	0.26
2124.11	0.80	266.77	2124.05	-1.89	-9.49	-5.10	10.77	208.23	0.55
2145.71	0.79	266.80	2145.66	-1.66	-9.51	-5.39	10.93	209.56	0.03
2171.48	0.74	265.45	2171.42	-1.41	-9.53	-5.74	11.13	211.04	0.20
2197.62	0.81	262.50	2197.56	-1.16	-9.57	-6.09	11.34	212.46	0.30
2223.50	0.82	262.88	2223.44	-0.90	-9.62	-6.45	11.58	213.87	0.07
2249.13	0.91	264.92	2249.06	-0.62	-9.66	-6.84	11.83	215.31	0.36
2270.96	1.00	272.65	2270.89	-0.34	-9.66	-7.20	12.05	216.69	0.71
2297.08	1.02	270.48	2297.01	0.03	-9.65	-7.66	12.32	218.44	0.17
2322.46	1.01	280.89	2322.38	0.40	-9.61	-8.11	12.57	220.16	0.73
2348.45	1.00	286.08	2348.36	0.82	-9.50	-8.55	12.78	221.98	0.35
2374.69	1.07	283.76	2374.60	1.25	-9.38	-9.01	13.01	223.84	0.30
2395.75	1.06	284.89	2395.66	1.61	-9.28	-9.39	13.20	225.32	0.10
2422.00	1.04	289.49	2421.91	2.06	-9.14	-9.85	13.44	227.13	0.33
2448.89	1.11	284.84	2448.79	2.53	-8.99	-10.33	13.70	228.95	0.41
2474.10	1.08	283.26	2474.00	2.97	-8.88	-10.80	13.98	230.57	0.16
2496.19	1.10	284.22	2496.08	3.35	-8.78	-11.21	14.23	231.93	0.12
2521.33	1.11	284.65	2521.22	3.79	-8.66	-11.68	14.53	233.45	0.04
2547.10	1.12	280.32	2546.98	4.24	-8.55	-12.16	14.87	234.91	0.33
2572.69	1.09	286.01	2572.57	4.69	-8.44	-12.65	15.20	236.29	0.45
2597.49	0.97	283.68	2597.37	5.10	-8.32	-13.08	15.50	237.53	0.50
2623.17	0.85	291.76	2623.04	5.48	-8.20	-13.47	15.76	238.67	0.70
2648.94	1.02	307.25	2648.81	5.89	-7.99	-13.82	15.97	239.97	1.17
2673.14	0.75	303.82	2673.00	6.26	-7.77	-14.13	16.12	241.19	1.10
2698.91	0.71	304.73	2698.78	6.59	-7.59	-14.40	16.27	242.22	0.19
2724.67	0.62	309.53	2724.53	6.89	-7.41	-14.64	16.40	243.16	0.39

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	Closure Distance ft	Closure Direction deg	DLS °/100ft
2749.32	0.62	308.02	2749.18	7.16	-7.24	-14.85	16.52	244.01	0.07
2770.99	0.59	306.03	2770.84	7.39	-7.10	-15.03	16.62	244.71	0.19
2797.10	0.53	294.41	2796.95	7.64	-6.97	-15.25	16.76	245.42	0.49
2822.84	0.59	303.19	2822.70	7.88	-6.85	-15.47	16.91	246.11	0.42
2847.71	0.42	291.27	2847.57	8.10	-6.75	-15.66	17.05	246.69	0.83
2873.32	0.58	291.36	2873.17	8.31	-6.67	-15.86	17.21	247.21	0.64
2898.80	0.53	300.74	2898.66	8.55	-6.56	-16.09	17.37	247.82	0.40
2923.91	0.61	297.65	2923.76	8.80	-6.44	-16.30	17.53	248.45	0.31
2949.38	0.63	297.08	2949.23	9.07	-6.31	-16.55	17.71	249.12	0.09
2974.97	0.65	296.35	2974.82	9.35	-6.18	-16.80	17.90	249.80	0.10
2999.94	0.62	309.99	2999.79	9.62	-6.03	-17.03	18.07	250.50	0.62
3021.34	0.66	300.65	3021.19	9.86	-5.90	-17.23	18.21	251.11	0.51
3046.94	0.57	304.18	3046.78	10.13	-5.75	-17.46	18.38	251.77	0.38
3071.91	0.64	308.96	3071.75	10.39	-5.59	-17.67	18.53	252.43	0.34
3097.36	0.50	308.65	3097.20	10.65	-5.44	-17.87	18.67	253.08	0.53
3122.94	0.54	309.26	3122.78	10.88	-5.29	-18.05	18.81	253.67	0.18
3148.53	0.52	314.12	3148.36	11.12	-5.13	-18.23	18.93	254.28	0.20
3173.98	0.55	308.57	3173.82	11.35	-4.97	-18.40	19.06	254.88	0.23
3199.68	0.57	306.19	3199.52	11.61	-4.82	-18.60	19.22	255.47	0.12
3224.51	0.57	313.99	3224.35	11.85	-4.66	-18.79	19.36	256.07	0.31
3246.00	0.65	326.06	3245.84	12.08	-4.48	-18.94	19.46	256.68	0.70
3271.70	0.58	324.67	3271.53	12.34	-4.26	-19.10	19.57	257.43	0.29
3296.98	0.67	321.04	3296.81	12.61	-4.04	-19.26	19.68	258.16	0.37
3322.62	0.67	328.53	3322.45	12.90	-3.79	-19.44	19.80	258.95	0.34
3347.81	0.81	328.50	3347.64	13.20	-3.52	-19.61	19.92	259.83	0.56
3372.05	0.73	331.37	3371.88	13.50	-3.24	-19.77	20.03	260.70	0.38
3397.88	0.83	325.24	3397.70	13.83	-2.94	-19.95	20.17	261.62	0.52
3423.13	0.86	327.19	3422.95	14.18	-2.63	-20.16	20.33	262.57	0.16
3448.11	0.89	334.52	3447.93	14.54	-2.30	-20.34	20.47	263.56	0.47
3473.20	0.90	329.88	3473.01	14.89	-1.95	-20.53	20.62	264.57	0.29
3497.69	0.88	339.00	3497.50	15.24	-1.61	-20.69	20.75	265.55	0.58
3522.78	0.92	327.69	3522.59	15.59	-1.26	-20.87	20.91	266.55	0.73
3547.14	0.92	332.72	3546.94	15.95	-0.92	-21.06	21.08	267.50	0.33
3572.21	0.88	336.25	3572.01	16.31	-0.56	-21.23	21.24	268.48	0.28
3597.28	0.97	334.71	3597.08	16.67	-0.20	-21.40	21.40	269.47	0.40
3621.61	1.09	334.67	3621.41	17.06	0.20	-21.59	21.59	270.53	0.48

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ft	deg	deg	ft	ft	ft	ft	ft	deg	°/100ft
3646.80	0.98	332.25	3646.59	17.47	0.61	-21.79	21.80	271.59	0.46
3671.69	1.00	331.09	3671.48	17.87	0.99	-22.00	22.02	272.57	0.12
3699.69	0.98	330.46	3699.48	18.32	1.41	-22.23	22.28	273.63	0.08
3721.10	0.96	331.45	3720.88	18.65	1.73	-22.41	22.48	274.41	0.12
3746.12	0.92	329.23	3745.90	19.03	2.09	-22.61	22.71	275.27	0.23
3774.17	0.83	329.07	3773.94	19.43	2.45	-22.83	22.96	276.13	0.33
3799.42	0.86	326.16	3799.19	19.78	2.77	-23.03	23.20	276.85	0.20
3824.54	0.90	329.53	3824.31	20.15	3.09	-23.24	23.44	277.58	0.26
3848.58	0.93	328.69	3848.35	20.51	3.42	-23.43	23.68	278.31	0.16
3873.70	0.92	331.47	3873.46	20.88	3.77	-23.64	23.94	279.07	0.19
3898.83	0.85	335.27	3898.58	21.23	4.12	-23.81	24.16	279.82	0.35
3922.97	1.03	344.10	3922.73	21.57	4.49	-23.94	24.36	280.62	0.93
3948.10	1.00	346.00	3947.85	21.92	4.92	-24.06	24.56	281.56	0.18
3973.71	0.97	344.78	3973.45	22.28	5.34	-24.17	24.75	282.47	0.12
3998.71	1.11	346.16	3998.45	22.64	5.78	-24.28	24.96	283.40	0.55
4022.74	0.98	347.02	4022.47	22.98	6.21	-24.38	25.16	284.29	0.52
4048.11	1.07	343.20	4047.84	23.35	6.65	-24.50	25.39	285.18	0.42
4072.97	1.10	350.90	4072.70	23.71	7.11	-24.61	25.61	286.11	0.60
4097.09	1.00	343.43	4096.82	24.05	7.54	-24.70	25.83	286.96	0.70
4122.29	0.99	337.75	4122.01	24.42	7.95	-24.85	26.09	287.74	0.39
4146.79	1.10	346.21	4146.51	24.79	8.37	-24.98	26.35	288.53	0.77
4174.54	1.11	343.68	4174.25	25.22	8.89	-25.12	26.65	289.49	0.18
4199.06	1.20	345.07	4198.77	25.62	9.37	-25.26	26.94	290.35	0.35
4223.59	1.11	335.10	4223.29	26.04	9.83	-25.42	27.26	291.14	0.89
4248.82	1.13	336.40	4248.51	26.48	10.28	-25.63	27.61	291.86	0.12
4272.60	1.22	350.01	4272.30	26.87	10.74	-25.76	27.91	292.64	1.24
4297.22	1.46	341.97	4296.91	27.33	11.30	-25.91	28.26	293.57	1.22
4322.31	1.61	340.17	4321.98	27.90	11.93	-26.12	28.72	294.55	0.62
4346.66	1.53	339.67	4346.33	28.46	12.56	-26.35	29.19	295.49	0.30
4374.32	1.57	341.15	4373.98	29.10	13.27	-26.60	29.73	296.51	0.20
4399.01	1.71	344.41	4398.66	29.68	13.94	-26.81	30.22	297.48	0.67
4423.33	1.76	345.16	4422.97	30.27	14.65	-27.01	30.73	298.49	0.24
4447.06	1.92	347.22	4446.69	30.87	15.39	-27.19	31.24	299.52	0.70
4471.59	2.23	342.78	4471.20	31.59	16.25	-27.42	31.87	300.65	1.43
4499.91	1.66	343.43	4499.50	32.38	17.17	-27.70	32.59	301.79	2.01
4523.60	1.60	347.29	4523.18	32.91	17.82	-27.87	33.08	302.59	0.52



Well Name: WALTERHUNZKIER #2
 Survey: WALTER HUNZKIER #2
 Survey Date: 11/26/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	Closure Distance ft	Closure Direction deg	DLS °/100ft
4547.75	1.87	350.01	4547.33	33.47	18.54	-28.01	33.59	303.50	1.17
4572.49	1.86	347.36	4572.05	34.09	19.33	-28.17	34.16	304.45	0.35
4595.92	1.66	346.40	4595.46	34.65	20.03	-28.33	34.70	305.26	0.87
4624.26	1.69	346.13	4623.80	35.30	20.83	-28.53	35.33	306.14	0.13
4648.56	1.36	332.93	4648.09	35.85	21.44	-28.75	35.86	306.72	1.98
4674.32	1.48	351.53	4673.84	36.37	22.04	-28.94	36.38	307.30	1.85
4697.85	1.60	354.42	4697.37	36.82	22.67	-29.01	36.82	308.00	0.58
4708.66	1.44	348.71	4708.16	37.03	22.95	-29.05	37.03	308.31	2.01