



Gyroscopic Survey Report
for
K.P.Kauffman

Well Location	Weld County, Colorado
Well Name	William C Landsdown Unit C-1
Rig Number	Kpk 3
Survey Date	3/30/2014
Latitude	40.1181980°N
North Reference	True North
Grid Correction	None
Depth Reference	Ground Level (4943.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 339.81Azim (deg)
Definitive Survey	WILLIAM C LANDSDOWN C-1
Operator(s)	Jon Valenzuela

Well Notes

Survey Report

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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	Course Length ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00	Invalid
50.24	0.38	70.70	50.24	0.00	0.05	0.16	0.75	0.16	70.70	50.24
99.81	0.42	57.32	99.80	0.03	0.21	0.46	0.21	0.51	65.91	49.57
148.76	0.45	43.69	148.76	0.16	0.44	0.75	0.22	0.87	59.35	48.95
199.81	0.32	34.24	199.80	0.33	0.71	0.97	0.27	1.20	53.83	51.05
249.48	0.28	61.57	249.47	0.43	0.88	1.15	0.30	1.45	52.61	49.67
299.64	0.39	68.33	299.63	0.45	1.00	1.42	0.24	1.74	54.78	50.16
348.73	0.54	8.51	348.72	0.66	1.29	1.61	0.98	2.07	51.24	49.09
398.86	0.53	352.05	398.85	1.09	1.76	1.61	0.31	2.39	42.56	50.13
449.45	0.33	22.37	449.44	1.43	2.12	1.64	0.59	2.68	37.62	50.59
499.81	0.53	26.37	499.80	1.70	2.47	1.80	0.40	3.05	36.04	50.36
548.84	0.54	13.87	548.82	2.04	2.89	1.95	0.24	3.49	33.99	49.03
599.33	0.47	1.02	599.31	2.43	3.33	2.01	0.26	3.89	31.13	50.49
649.68	0.25	24.26	649.66	2.71	3.64	2.06	0.51	4.18	29.52	50.35
699.91	0.46	17.95	699.89	2.95	3.94	2.17	0.42	4.49	28.87	50.23
748.76	0.52	6.12	748.74	3.30	4.34	2.25	0.24	4.89	27.43	48.85
799.16	0.31	340.21	799.14	3.64	4.70	2.23	0.55	5.20	25.42	50.40
849.23	0.17	3.87	849.21	3.84	4.90	2.19	0.33	5.37	24.10	50.07
899.43	0.49	22.86	899.41	4.07	5.18	2.28	0.67	5.66	23.79	50.20
949.59	0.39	3.82	949.56	4.39	5.55	2.38	0.35	6.04	23.20	50.16
999.63	0.26	339.78	999.61	4.66	5.83	2.35	0.38	6.28	21.96	50.04
1049.52	0.17	336.09	1049.49	4.85	6.00	2.28	0.18	6.42	20.80	49.89
1099.54	0.21	346.94	1099.52	5.01	6.16	2.23	0.10	6.55	19.88	50.02
1149.51	0.35	1.08	1149.48	5.25	6.40	2.21	0.31	6.77	19.04	49.96
1199.37	0.39	338.26	1199.34	5.56	6.71	2.15	0.30	7.05	17.77	49.86
1249.24	0.32	321.98	1249.21	5.86	6.98	2.00	0.24	7.26	16.02	49.87
1299.07	0.29	315.30	1299.04	6.10	7.18	1.83	0.09	7.41	14.30	49.83
1349.72	0.17	353.57	1349.69	6.30	7.34	1.73	0.37	7.54	13.26	50.64
1398.96	0.26	4.62	1398.93	6.47	7.53	1.73	0.19	7.72	12.95	49.24
1449.35	0.28	1.81	1449.32	6.69	7.77	1.74	0.06	7.96	12.66	50.39
1499.67	0.31	357.65	1499.64	6.93	8.03	1.74	0.07	8.21	12.24	50.32
1549.92	0.23	342.43	1549.89	7.16	8.26	1.71	0.21	8.43	11.67	50.25
1599.90	0.19	347.22	1599.87	7.35	8.44	1.66	0.08	8.60	11.11	49.98
1648.82	0.19	33.83	1648.79	7.48	8.59	1.68	0.31	8.75	11.10	48.92
1699.14	0.22	33.62	1699.11	7.58	8.74	1.78	0.06	8.92	11.54	50.32
1749.64	0.26	348.63	1749.60	7.76	8.93	1.82	0.38	9.11	11.49	50.50

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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	Course Length ft
1798.77	0.24	338.51	1798.74	7.97	9.14	1.75	0.10	9.31	10.87	49.14
1849.04	0.28	326.81	1849.01	8.20	9.34	1.65	0.13	9.49	10.00	50.27
1899.22	0.27	303.27	1899.18	8.42	9.51	1.48	0.23	9.63	8.86	50.18
1949.75	0.22	300.47	1949.72	8.58	9.62	1.30	0.10	9.71	7.69	50.54
1999.75	0.18	283.73	1999.71	8.70	9.69	1.14	0.14	9.76	6.72	50.00
2049.23	0.12	297.27	2049.19	8.78	9.73	1.02	0.14	9.79	6.00	49.48
2099.29	0.23	298.67	2099.25	8.89	9.80	0.89	0.22	9.84	5.19	50.06
2149.15	0.15	281.49	2149.11	9.00	9.86	0.74	0.19	9.89	4.30	49.86
2199.77	0.19	311.94	2199.73	9.11	9.93	0.62	0.19	9.95	3.55	50.62
2250.00	0.22	313.04	2249.96	9.27	10.05	0.48	0.06	10.06	2.76	50.23
2299.92	0.40	348.59	2299.88	9.53	10.29	0.38	0.51	10.30	2.12	49.92
2349.24	0.49	352.24	2349.20	9.90	10.67	0.32	0.20	10.67	1.70	49.32
2398.55	0.57	345.88	2398.51	10.36	11.12	0.23	0.19	11.12	1.18	49.31
2449.43	0.63	343.61	2449.38	10.89	11.63	0.09	0.13	11.63	0.43	50.88
2499.92	0.76	355.52	2499.88	11.49	12.24	-0.02	0.39	12.24	359.92	50.49
2548.90	0.71	1.59	2548.85	12.09	12.87	-0.03	0.19	12.87	359.85	48.98
2599.24	0.61	355.96	2599.19	12.64	13.45	-0.04	0.24	13.45	359.81	50.34
2649.68	0.84	4.23	2649.62	13.23	14.09	-0.04	0.51	14.09	359.86	50.43
2699.49	0.87	356.95	2699.42	13.93	14.83	-0.03	0.23	14.83	359.89	49.81
2749.04	0.88	4.24	2748.97	14.63	15.59	-0.02	0.22	15.59	359.92	49.55
2799.45	0.96	352.65	2799.37	15.40	16.39	-0.05	0.41	16.39	359.84	50.41
2848.94	0.93	357.78	2848.86	16.19	17.21	-0.12	0.18	17.21	359.62	49.49
2898.41	0.89	350.93	2898.32	16.95	17.99	-0.19	0.24	17.99	359.39	49.47
2949.84	0.86	358.90	2949.75	17.70	18.77	-0.26	0.24	18.77	359.20	51.43
2999.42	0.91	352.03	2999.32	18.44	19.53	-0.32	0.24	19.53	359.05	49.58
3049.24	0.83	350.22	3049.13	19.18	20.28	-0.44	0.18	20.28	358.76	49.82
3098.92	0.94	354.02	3098.81	19.93	21.04	-0.54	0.24	21.04	358.52	49.68
3149.27	0.86	352.25	3149.15	20.70	21.82	-0.64	0.16	21.83	358.33	50.35
3199.78	0.93	346.10	3199.65	21.48	22.59	-0.79	0.23	22.61	358.01	50.51
3249.75	0.91	347.87	3249.61	22.27	23.37	-0.97	0.06	23.39	357.63	49.97
3299.64	0.42	331.04	3299.50	22.85	23.92	-1.14	1.05	23.95	357.27	49.89
3349.84	0.73	342.83	3349.70	23.35	24.39	-1.32	0.65	24.43	356.89	50.20
3399.59	0.60	342.28	3399.45	23.93	24.94	-1.50	0.25	24.99	356.57	49.75
3449.25	0.35	352.01	3449.11	24.33	25.34	-1.60	0.53	25.39	356.39	49.66
3498.82	0.44	341.40	3498.67	24.67	25.67	-1.68	0.23	25.72	356.26	49.57
3548.85	0.52	348.05	3548.70	25.09	26.07	-1.79	0.19	26.13	356.08	50.03

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3599.74	0.54	315.42	3599.59	25.53	26.47	-2.00	0.58	26.54	355.68	50.89
3649.11	0.55	301.02	3648.96	25.93	26.75	-2.37	0.28	26.86	354.95	49.38
3699.00	0.90	302.02	3698.84	26.42	27.08	-2.90	0.70	27.24	353.88	49.88
3748.60	0.96	304.62	3748.44	27.07	27.53	-3.57	0.16	27.76	352.60	49.60
3799.08	0.93	317.38	3798.92	27.79	28.07	-4.20	0.42	28.38	351.49	50.48
3849.04	0.97	338.94	3848.87	28.59	28.76	-4.62	0.71	29.13	350.87	49.96
3899.02	0.91	329.87	3898.84	29.40	29.49	-4.97	0.32	29.91	350.43	49.97
3948.79	0.90	313.14	3948.60	30.14	30.10	-5.46	0.53	30.59	349.72	49.77
3998.99	1.04	331.17	3998.80	30.94	30.77	-5.96	0.66	31.34	349.03	50.21
4049.35	0.98	318.87	4049.15	31.79	31.49	-6.47	0.44	32.15	348.39	50.36
4099.88	1.03	320.34	4099.67	32.63	32.17	-7.04	0.11	32.93	347.65	50.53
4148.86	0.98	321.23	4148.64	33.44	32.84	-7.59	0.11	33.70	346.99	48.98
4198.94	0.85	322.05	4198.72	34.20	33.46	-8.08	0.26	34.43	346.42	50.08
4249.43	0.64	317.93	4249.20	34.81	33.97	-8.50	0.43	35.02	345.95	50.49
4299.55	0.30	307.48	4299.32	35.19	34.26	-8.79	0.69	35.37	345.60	50.12
4349.99	0.12	292.17	4349.76	35.34	34.36	-8.95	0.38	35.50	345.40	50.44
4399.97	0.39	269.79	4399.74	35.43	34.38	-9.17	0.57	35.58	345.06	49.97
4449.85	0.52	265.18	4449.61	35.55	34.36	-9.56	0.26	35.66	344.44	49.88
4498.87	0.64	278.64	4498.64	35.74	34.38	-10.05	0.37	35.82	343.70	49.02
4548.82	0.63	279.78	4548.58	36.01	34.47	-10.60	0.03	36.06	342.91	49.95
4598.86	0.80	253.74	4598.62	36.17	34.42	-11.21	0.73	36.19	341.97	50.04
4649.73	0.96	281.25	4649.48	36.41	34.40	-11.96	0.87	36.42	340.82	50.87
4699.20	0.59	292.38	4698.95	36.80	34.58	-12.60	0.80	36.80	339.97	49.47
4711.21	0.56	264.40	4710.95	36.86	34.59	-12.72	2.33	36.86	339.81	12.00