



Gyroscopic Survey Report
for
KP KAUFMAN
1675 BROADWAY SUITE 2800
DENVER, CO 80202

Well Location	WELD, CO
Well Name	MARY LEINWEBER #1
Rig Number	
Survey Date	8/26/2014
Latitude	40.0675100°N
Longitude	104.8456800°W
North Reference	True North
Grid Correction	None
Depth Reference	GROUND LEVEL (0.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 266.80Azim (deg)
Definitive Survey	None
Operator(s)	P HOLBROOK / T CELLAN

Well Notes

Well Name: MARY LEINWEBER #1
Survey: MARY LEINWEBER #1
Survey Date: 8/26/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
88.01	1.26	218.89	88.00	0.65	-0.75	-0.61	1.43
110.35	1.18	218.45	110.34	0.96	-1.12	-0.90	0.33
135.80	1.11	221.94	135.78	1.31	-1.51	-1.23	0.41
161.32	1.11	222.33	161.30	1.66	-1.88	-1.56	0.03
186.56	1.17	220.34	186.53	2.02	-2.25	-1.89	0.29
211.11	1.18	223.30	211.08	2.37	-2.63	-2.23	0.25
235.48	1.12	235.67	235.44	2.76	-2.95	-2.60	1.05
260.22	1.10	239.11	260.18	3.17	-3.20	-3.00	0.28
285.65	1.21	233.37	285.60	3.62	-3.49	-3.43	0.61
310.20	1.03	241.58	310.15	4.03	-3.75	-3.83	0.98
335.58	1.16	237.95	335.52	4.46	-3.99	-4.25	0.60
360.06	1.06	238.06	360.00	4.88	-4.25	-4.65	0.43
385.37	0.94	240.29	385.30	5.27	-4.47	-5.03	0.48
409.88	0.94	233.59	409.81	5.62	-4.69	-5.36	0.45
437.98	0.86	236.22	437.91	5.99	-4.95	-5.73	0.30
462.91	0.94	236.74	462.83	6.33	-5.16	-6.05	0.31
487.88	0.74	237.21	487.81	6.65	-5.36	-6.36	0.79
512.77	0.68	237.52	512.69	6.92	-5.53	-6.62	0.26
537.80	0.63	243.94	537.72	7.18	-5.67	-6.87	0.35
562.69	0.50	239.58	562.61	7.40	-5.78	-7.09	0.54
586.69	0.56	232.90	586.61	7.59	-5.91	-7.27	0.34
611.10	0.58	233.70	611.02	7.79	-6.05	-7.47	0.10
636.10	0.59	229.64	636.01	8.00	-6.21	-7.67	0.17
660.48	0.55	229.63	660.39	8.20	-6.37	-7.85	0.17
687.59	0.49	228.83	687.51	8.39	-6.53	-8.04	0.24
712.52	0.61	235.41	712.43	8.59	-6.68	-8.23	0.55
737.26	0.62	236.46	737.17	8.81	-6.82	-8.45	0.06
762.23	0.42	241.35	762.14	9.01	-6.94	-8.64	0.82
787.14	0.58	241.54	787.05	9.21	-7.05	-8.83	0.62
811.98	0.45	244.79	811.89	9.41	-7.15	-9.03	0.54
836.38	0.56	230.72	836.29	9.60	-7.26	-9.21	0.68
860.33	0.55	232.16	860.24	9.79	-7.41	-9.39	0.06
887.90	0.45	228.83	887.80	9.98	-7.56	-9.58	0.38
912.31	0.38	245.30	912.21	10.13	-7.66	-9.72	0.56
935.72	0.37	254.17	935.63	10.28	-7.71	-9.87	0.26
960.71	0.34	256.69	960.62	10.43	-7.75	-10.02	0.12
985.66	0.33	249.98	985.56	10.58	-7.79	-10.16	0.17

Survey Report

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Survey Date:		8/26/2014					
MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
1010.48	0.56	227.20	1010.38	10.74	-7.90	-10.31	1.15
1036.67	0.40	261.80	1036.57	10.93	-8.00	-10.50	1.23
1060.37	0.33	290.39	1060.27	11.07	-7.99	-10.64	0.82
1086.70	0.42	271.09	1086.59	11.24	-7.96	-10.81	0.59
1112.87	0.54	286.42	1112.76	11.45	-7.92	-11.03	0.65
1134.42	0.53	297.87	1134.32	11.63	-7.85	-11.21	0.49
1161.40	0.53	281.82	1161.29	11.86	-7.76	-11.44	0.55
1184.93	0.54	293.04	1184.83	12.06	-7.70	-11.65	0.44
1210.83	0.43	293.48	1210.72	12.26	-7.61	-11.85	0.42
1237.17	0.38	290.77	1237.06	12.43	-7.54	-12.02	0.20
1262.23	0.30	283.36	1262.13	12.57	-7.50	-12.17	0.37
1284.44	0.31	275.94	1284.33	12.68	-7.48	-12.28	0.18
1312.77	0.39	298.09	1312.66	12.84	-7.42	-12.44	0.56
1337.54	0.32	300.42	1337.43	12.97	-7.35	-12.57	0.31
1360.58	0.25	291.73	1360.47	13.07	-7.30	-12.68	0.33
1385.31	0.31	301.12	1385.20	13.17	-7.24	-12.79	0.30
1410.93	0.27	294.57	1410.82	13.28	-7.18	-12.90	0.21
1435.88	0.29	295.05	1435.77	13.39	-7.13	-13.01	0.07
1460.20	0.32	286.15	1460.09	13.51	-7.09	-13.13	0.23
1485.04	0.29	285.61	1484.93	13.63	-7.05	-13.26	0.12
1509.99	0.21	280.00	1509.88	13.74	-7.02	-13.37	0.34
1537.64	0.31	292.53	1537.53	13.85	-6.99	-13.48	0.40
1562.49	0.25	278.08	1562.38	13.97	-6.95	-13.60	0.36
1587.46	0.44	270.87	1587.35	14.12	-6.95	-13.75	0.79
1611.81	0.36	272.19	1611.70	14.29	-6.94	-13.92	0.36
1636.65	0.36	278.55	1636.53	14.44	-6.93	-14.07	0.16
1661.56	0.20	265.56	1661.44	14.56	-6.92	-14.19	0.68
1685.88	0.36	279.54	1685.77	14.67	-6.91	-14.31	0.70
1711.30	0.28	270.08	1711.19	14.81	-6.90	-14.45	0.35
1737.61	0.28	274.95	1737.49	14.94	-6.89	-14.58	0.09
1762.08	0.31	271.43	1761.97	15.07	-6.88	-14.71	0.17
1783.46	0.30	280.74	1783.34	15.18	-6.87	-14.82	0.24
1809.90	0.38	288.94	1809.78	15.33	-6.83	-14.97	0.34
1836.22	0.43	290.34	1836.10	15.50	-6.77	-15.14	0.22
1861.70	0.41	283.81	1861.59	15.68	-6.71	-15.32	0.21
1883.89	0.44	282.39	1883.77	15.83	-6.67	-15.48	0.15
1910.21	0.52	291.71	1910.09	16.04	-6.61	-15.69	0.41

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MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	%/100ft
1935.91	0.28	278.58	1935.79	16.21	-6.56	-15.87	0.98
1962.29	0.40	282.23	1962.17	16.36	-6.53	-16.02	0.45
1983.43	0.56	285.69	1983.31	16.53	-6.48	-16.19	0.77
2009.40	0.43	283.99	2009.28	16.74	-6.43	-16.41	0.51
2035.29	0.47	278.85	2035.16	16.94	-6.39	-16.61	0.23
2060.63	0.47	276.05	2060.51	17.14	-6.36	-16.81	0.09
2086.60	0.51	285.98	2086.48	17.36	-6.32	-17.03	0.37
2112.46	0.38	252.53	2112.34	17.55	-6.31	-17.22	1.11
2137.73	0.41	301.22	2137.60	17.70	-6.29	-17.38	1.28
2159.44	0.52	284.52	2159.32	17.86	-6.22	-17.54	0.82
2185.39	0.49	279.35	2185.26	18.08	-6.18	-17.76	0.21
2210.50	0.45	272.77	2210.38	18.29	-6.15	-17.97	0.27
2235.65	0.43	288.68	2235.53	18.47	-6.12	-18.16	0.49
2260.89	0.41	270.52	2260.76	18.65	-6.09	-18.34	0.53
2286.71	0.56	277.13	2286.58	18.87	-6.07	-18.56	0.63
2308.47	0.51	270.37	2308.34	19.07	-6.06	-18.76	0.38
2335.07	0.63	272.79	2334.94	19.33	-6.05	-19.02	0.46
2359.43	0.64	276.72	2359.29	19.60	-6.03	-19.29	0.19
2385.32	0.66	272.55	2385.18	19.89	-6.00	-19.58	0.20
2410.51	0.50	266.27	2410.38	20.14	-6.00	-19.84	0.69
2436.16	0.73	277.24	2436.03	20.42	-5.99	-20.11	1.01
2462.02	0.59	269.94	2461.88	20.71	-5.97	-20.41	0.65
2487.21	0.72	279.07	2487.07	20.99	-5.94	-20.69	0.69
2508.70	0.81	279.28	2508.56	21.27	-5.90	-20.98	0.40
2534.56	1.00	292.10	2534.42	21.66	-5.78	-21.37	1.06
2559.87	0.91	282.99	2559.72	22.05	-5.66	-21.77	0.69
2585.75	0.90	293.29	2585.60	22.43	-5.53	-22.15	0.63
2610.59	0.94	290.86	2610.44	22.79	-5.38	-22.52	0.22
2636.06	0.87	300.23	2635.90	23.14	-5.21	-22.89	0.63
2661.96	0.93	285.35	2661.80	23.51	-5.05	-23.26	0.93
2687.05	0.85	301.67	2686.88	23.85	-4.90	-23.62	1.06
2712.57	0.90	296.41	2712.40	24.18	-4.71	-23.95	0.37
2737.37	0.86	305.14	2737.20	24.50	-4.52	-24.28	0.56
2762.24	1.04	291.49	2762.06	24.85	-4.33	-24.64	1.17
2783.39	1.02	298.55	2783.22	25.18	-4.17	-24.99	0.61
2809.04	0.76	340.18	2808.86	25.42	-3.90	-25.25	2.65
2834.86	0.41	322.81	2834.68	25.52	-3.67	-25.36	1.52
2859.93	0.52	311.49	2859.74	25.66	-3.52	-25.50	0.59

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MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
2885.32	0.89	328.84	2885.13	25.83	-3.27	-25.69	1.66
2908.57	0.79	307.97	2908.38	26.04	-3.02	-25.91	1.37
2933.99	0.67	283.56	2933.80	26.31	-2.88	-26.19	1.30
2960.03	0.58	313.87	2959.84	26.55	-2.75	-26.44	1.31
2983.93	0.59	314.09	2983.74	26.71	-2.58	-26.61	0.05
3009.31	0.63	300.61	3009.11	26.92	-2.42	-26.83	0.59
3034.66	0.64	313.41	3034.47	27.13	-2.25	-27.05	0.56
3059.37	0.63	311.85	3059.17	27.32	-2.07	-27.25	0.07
3084.75	0.56	309.04	3084.55	27.51	-1.89	-27.45	0.31
3109.92	0.51	310.12	3109.72	27.69	-1.74	-27.63	0.22
3134.62	0.54	316.03	3134.42	27.84	-1.59	-27.80	0.27
3159.99	0.62	302.96	3159.79	28.03	-1.43	-28.00	0.60
3184.54	0.61	316.01	3184.34	28.22	-1.26	-28.20	0.57
3209.21	0.51	310.41	3209.01	28.39	-1.09	-28.37	0.47
3234.62	0.62	300.99	3234.41	28.59	-0.95	-28.58	0.56
3259.89	0.69	301.69	3259.69	28.82	-0.80	-28.83	0.30
3284.89	0.25	323.92	3284.68	28.98	-0.68	-28.99	1.88
3311.11	0.44	310.42	3310.90	29.08	-0.56	-29.10	0.76
3336.62	0.54	307.20	3336.41	29.24	-0.43	-29.27	0.43
3362.01	0.64	292.03	3361.80	29.46	-0.30	-29.49	0.73
3384.01	0.38	324.20	3383.80	29.61	-0.20	-29.65	1.72
3412.75	0.42	358.09	3412.54	29.66	-0.01	-29.71	0.83
3437.76	0.34	327.46	3437.55	29.70	0.14	-29.75	0.87
3458.92	0.34	316.28	3458.71	29.77	0.24	-29.83	0.31
3487.95	0.31	332.22	3487.73	29.86	0.37	-29.92	0.33
3509.85	0.48	19.41	3509.64	29.85	0.51	-29.92	1.61
3533.95	0.31	11.85	3533.74	29.79	0.67	-29.87	0.73
3560.05	0.35	26.07	3559.84	29.73	0.81	-29.83	0.34
3584.80	0.26	33.40	3584.58	29.66	0.92	-29.76	0.38
3611.03	0.43	44.13	3610.81	29.55	1.04	-29.66	0.70
3637.26	0.18	22.79	3637.05	29.46	1.15	-29.57	1.05
3662.65	0.28	39.39	3662.44	29.41	1.24	-29.52	0.46
3684.55	0.23	71.09	3684.33	29.33	1.29	-29.44	0.66
3710.64	0.18	79.69	3710.42	29.23	1.32	-29.35	0.21
3735.97	0.15	31.39	3735.75	29.17	1.35	-29.30	0.56
3761.73	0.38	333.78	3761.51	29.19	1.46	-29.32	1.24
3785.98	0.71	315.68	3785.76	29.32	1.64	-29.46	1.54

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ft	deg	deg	ft	ft	ft	ft	°/100ft
3810.92	0.90	317.04	3810.70	29.55	1.89	-29.70	0.76
3835.39	0.99	314.98	3835.16	29.81	2.18	-29.98	0.41
3860.79	1.00	318.68	3860.56	30.09	2.50	-30.28	0.25
3886.09	1.02	322.75	3885.86	30.36	2.85	-30.56	0.30
3911.02	0.81	329.59	3910.78	30.56	3.18	-30.79	0.97
3936.74	0.91	343.62	3936.50	30.69	3.53	-30.94	0.90
3961.97	0.78	0.19	3961.73	30.73	3.89	-30.99	1.08
3987.41	0.65	13.62	3987.16	30.68	4.21	-30.96	0.84
4012.82	0.42	27.29	4012.57	30.59	4.43	-30.88	1.00
4034.56	0.22	58.31	4034.31	30.51	4.52	-30.81	1.19
4059.24	0.50	78.56	4059.00	30.36	4.57	-30.66	1.21
4085.17	0.56	92.12	4084.92	30.12	4.59	-30.43	0.54
4111.24	0.47	98.69	4110.99	29.89	4.57	-30.19	0.41
4136.68	0.57	105.53	4136.43	29.67	4.52	-29.97	0.45
4162.71	0.58	109.79	4162.46	29.42	4.44	-29.72	0.17
4184.05	0.56	118.22	4183.80	29.24	4.35	-29.53	0.40
4208.98	0.49	126.33	4208.73	29.05	4.23	-29.33	0.40
4234.84	0.43	123.40	4234.58	28.89	4.11	-29.16	0.27
4260.18	0.44	140.38	4259.93	28.75	3.98	-29.02	0.51
4285.52	0.53	151.91	4285.27	28.65	3.81	-28.90	0.52
4310.00	0.52	147.43	4309.74	28.54	3.61	-28.79	0.18
4336.01	0.59	157.00	4335.76	28.44	3.39	-28.68	0.44
4362.06	0.71	159.35	4361.81	28.35	3.12	-28.57	0.48
4387.42	0.71	176.71	4387.16	28.30	2.81	-28.50	0.85
4412.65	0.61	192.54	4412.39	28.34	2.53	-28.52	0.82
4437.89	0.70	198.80	4437.63	28.43	2.25	-28.60	0.46
4459.74	0.74	205.30	4459.48	28.55	1.99	-28.71	0.42
4485.82	0.71	209.53	4485.55	28.72	1.70	-28.86	0.24
4510.99	0.81	212.25	4510.72	28.91	1.41	-29.03	0.40
4536.99	0.82	218.63	4536.72	29.14	1.11	-29.24	0.36
4562.84	0.83	223.97	4562.56	29.40	0.83	-29.49	0.30
4587.22	0.85	221.41	4586.94	29.66	0.57	-29.73	0.17
4612.68	0.73	205.07	4612.40	29.87	0.28	-29.93	0.99
4636.57	0.72	202.06	4636.29	30.00	0.00	-30.05	0.17
4661.44	0.96	223.87	4661.16	30.22	-0.29	-30.25	1.60
4686.29	1.13	223.97	4686.00	30.55	-0.62	-30.57	0.68
4710.18	0.98	210.28	4709.89	30.84	-0.97	-30.83	1.23
4736.98	1.02	206.99	4736.68	31.08	-1.38	-31.06	0.27



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Survey Date: 8/26/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
4758.83	0.86	184.95	4758.54	31.21	-1.71	-31.16	1.80