



Gyroscopic Survey Report
for
K.P. Kauffman

Well Location	Weld County,Colorado
Well Name	Musick-Mcclintock No.3
Rig Number	KPK 2
Survey Date	4/23/2014
Latitude	40.2742960°N
North Reference	True North
Grid Correction	None
Depth Reference	Ground Elevation (4892.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 265.94Azim (deg)
Definitive Survey	KPK Musick McIntock 3 outrun definitive
Operator(s)	Jon Valenzuela

Well Notes

Well Name: Musick-Mcclintock No.3
Survey: KPK Musick McIntock 3 outrun definitive
Survey Date: 4/23/2014

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
49.08	0.68	139.53	49.07	-0.17	-0.22	0.19	1.39	0.29	139.53
99.94	0.46	135.60	99.94	-0.48	-0.60	0.53	0.45	0.80	138.53
149.76	0.19	219.02	149.76	-0.56	-0.80	0.61	0.95	1.01	142.62
198.71	0.21	255.86	198.70	-0.41	-0.89	0.48	0.26	1.01	151.90
249.32	0.34	242.57	249.31	-0.18	-0.98	0.25	0.29	1.01	165.71
299.68	0.29	245.20	299.67	0.08	-1.11	0.00	0.10	1.11	180.03
349.89	0.34	240.56	349.88	0.33	-1.23	-0.25	0.11	1.26	191.34
398.39	0.32	243.69	398.38	0.59	-1.37	-0.50	0.06	1.45	199.93
449.34	0.36	240.12	449.33	0.87	-1.51	-0.76	0.10	1.69	206.83
498.45	0.39	230.33	498.44	1.15	-1.69	-1.03	0.15	1.98	211.26
548.37	0.40	233.04	548.36	1.43	-1.91	-1.30	0.04	2.31	214.25
598.23	0.40	235.71	598.22	1.73	-2.11	-1.58	0.04	2.64	216.84
649.80	0.28	228.91	649.79	1.98	-2.29	-1.82	0.24	2.93	218.49
699.63	0.32	241.94	699.62	2.21	-2.44	-2.04	0.16	3.18	219.89
749.68	0.47	245.97	749.66	2.53	-2.59	-2.35	0.31	3.50	222.24
799.23	0.51	245.69	799.22	2.93	-2.76	-2.74	0.06	3.89	224.74
848.81	0.53	246.90	848.79	3.35	-2.95	-3.15	0.06	4.31	226.94
898.26	0.64	245.08	898.24	3.83	-3.15	-3.61	0.21	4.79	228.90
949.76	0.63	252.86	949.74	4.37	-3.35	-4.14	0.17	5.33	230.99
999.68	0.60	256.76	999.65	4.89	-3.50	-4.66	0.10	5.82	233.11
1049.50	0.63	252.04	1049.47	5.42	-3.64	-5.17	0.11	6.33	234.87
1099.05	0.84	265.79	1099.02	6.04	-3.75	-5.79	0.55	6.90	237.08
1148.95	0.95	268.14	1148.91	6.82	-3.79	-6.57	0.24	7.59	240.02
1199.33	1.15	272.34	1199.29	7.74	-3.78	-7.49	0.42	8.40	243.21
1249.72	1.46	274.17	1249.65	8.88	-3.72	-8.64	0.61	9.40	246.72
1298.64	1.58	282.27	1298.56	10.14	-3.53	-9.92	0.51	10.52	250.41
1348.98	2.03	286.09	1348.88	11.64	-3.13	-11.45	0.92	11.87	254.70
1399.24	2.45	290.94	1399.10	13.45	-2.50	-13.31	0.92	13.54	259.35
1449.43	2.72	293.49	1449.24	15.48	-1.64	-15.40	0.58	15.49	263.90
1499.65	2.97	297.15	1499.39	17.65	-0.58	-17.65	0.61	17.66	268.13
1549.90	3.14	299.76	1549.57	19.90	0.70	-20.00	0.45	20.02	272.00
1598.64	3.11	301.87	1598.25	22.08	2.06	-22.29	0.25	22.38	275.28
1648.73	2.79	303.62	1648.27	24.15	3.45	-24.45	0.66	24.69	278.03
1698.90	2.47	305.21	1698.39	25.95	4.75	-26.35	0.65	26.78	280.22
1749.03	2.11	304.28	1748.48	27.51	5.89	-27.99	0.72	28.61	281.88

Survey Report

Well Name: Musick-Mcclintock No.3
Survey: KPK Musick McIntock 3 outrun definitive
Survey Date: 4/23/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
1799.64	1.92	304.84	1799.05	28.90	6.90	-29.46	0.37	30.26	283.18
1849.46	1.53	306.20	1848.85	30.06	7.77	-30.68	0.80	31.65	284.21
1899.88	1.43	311.00	1899.25	31.01	8.58	-31.70	0.31	32.84	285.14
1948.99	0.97	316.72	1948.35	31.71	9.28	-32.44	0.96	33.75	285.97
1999.70	0.91	320.29	1999.05	32.21	9.90	-32.99	0.17	34.45	286.71
2049.86	0.77	323.10	2049.21	32.63	10.48	-33.45	0.28	35.05	287.39
2098.78	0.74	330.23	2098.13	32.94	11.02	-33.80	0.20	35.55	288.05
2148.98	0.58	333.65	2148.32	33.18	11.53	-34.08	0.32	35.97	288.69
2199.09	0.51	335.09	2198.43	33.35	11.95	-34.28	0.16	36.31	289.22
2249.14	0.49	343.41	2248.47	33.48	12.36	-34.44	0.15	36.59	289.74
2299.10	0.34	351.84	2298.44	33.53	12.71	-34.52	0.31	36.79	290.21
2349.12	0.26	31.54	2348.45	33.48	12.96	-34.48	0.44	36.83	290.59
2399.43	0.46	83.04	2398.77	33.21	13.08	-34.22	0.71	36.64	290.91
2449.30	1.08	108.65	2448.63	32.58	12.95	-33.58	1.40	35.99	291.09
2499.91	1.60	115.76	2499.23	31.53	12.49	-32.50	1.07	34.81	291.03
2549.88	1.73	115.20	2549.17	30.27	11.87	-31.19	0.27	33.37	290.84
2598.93	1.77	114.85	2598.20	28.96	11.24	-29.83	0.09	31.88	290.64
2649.58	1.75	116.55	2648.83	27.61	10.56	-28.43	0.11	30.33	290.38
2699.03	1.65	113.19	2698.25	26.33	9.94	-27.10	0.29	28.87	290.15
2749.31	1.49	111.22	2748.52	25.09	9.42	-25.82	0.33	27.49	290.05
2799.57	1.27	104.80	2798.76	23.97	9.04	-24.68	0.53	26.28	290.13
2849.75	1.17	113.91	2848.93	22.99	8.69	-23.67	0.43	25.22	290.17
2899.92	1.25	78.07	2899.09	22.00	8.60	-22.66	1.49	24.24	290.78
2949.98	1.18	97.31	2949.14	20.95	8.65	-21.62	0.82	23.28	291.80
2998.68	0.97	91.29	2997.83	20.05	8.57	-20.71	0.50	22.41	292.49
3048.77	0.94	84.80	3047.91	19.22	8.60	-19.88	0.22	21.66	293.40
3098.76	0.81	89.52	3097.90	18.45	8.64	-19.11	0.29	20.97	294.33
3148.80	0.66	95.39	3147.93	17.82	8.62	-18.47	0.35	20.38	295.01
3199.49	0.71	106.91	3198.62	17.24	8.50	-17.88	0.29	19.80	295.42
3249.07	0.70	99.41	3248.19	16.65	8.36	-17.29	0.19	19.20	295.80
3298.74	0.89	112.24	3297.86	16.01	8.16	-16.63	0.52	18.53	296.14
3349.20	0.83	127.77	3348.32	15.39	7.79	-15.98	0.47	17.78	295.99
3398.97	1.20	133.79	3398.08	14.77	7.21	-15.32	0.79	16.93	295.20
3449.90	1.10	138.09	3449.00	14.11	6.48	-14.61	0.27	15.98	293.91
3499.45	1.03	132.99	3498.54	13.52	5.82	-13.97	0.24	15.13	292.62
3548.83	1.06	125.80	3547.92	12.87	5.25	-13.27	0.28	14.27	291.59

Well Name: Musick-Mcclintock No.3
Survey: KPK Musick McIntock 3 outrun definitive
Survey Date: 4/23/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
3599.73	1.05	134.24	3598.80	12.19	4.65	-12.55	0.31	13.39	290.32
3649.14	1.08	140.55	3648.20	11.62	3.97	-11.93	0.24	12.58	288.42
3699.82	0.20	202.73	3698.88	11.39	3.52	-11.66	1.97	12.19	286.81
3748.99	0.22	136.78	3748.05	11.37	3.38	-11.63	0.47	12.11	286.18
3799.60	0.34	216.68	3798.65	11.40	3.18	-11.66	0.74	12.08	285.27
3848.37	0.27	192.23	3847.43	11.53	2.95	-11.77	0.31	12.13	284.09
3898.84	0.20	221.02	3897.90	11.63	2.77	-11.85	0.26	12.17	283.16
3949.25	0.35	200.01	3948.31	11.75	2.56	-11.96	0.35	12.24	282.07
3999.61	0.34	208.21	3998.66	11.90	2.29	-12.09	0.10	12.30	280.71
4049.60	0.30	200.93	4048.65	12.03	2.04	-12.20	0.11	12.37	279.47
4099.92	0.26	217.79	4098.98	12.16	1.82	-12.32	0.18	12.45	278.42
4149.66	0.40	190.69	4148.72	12.28	1.57	-12.42	0.41	12.52	277.18
4198.98	0.43	204.84	4198.03	12.41	1.23	-12.53	0.22	12.59	275.60
4249.49	0.42	192.84	4248.55	12.56	0.88	-12.65	0.18	12.68	273.97
4298.76	0.42	178.94	4297.81	12.62	0.52	-12.69	0.21	12.70	272.35
4349.12	0.42	202.90	4348.17	12.71	0.17	-12.75	0.35	12.76	270.75
4399.54	0.35	178.47	4398.59	12.80	-0.15	-12.82	0.35	12.82	269.31
4449.98	0.31	165.39	4449.03	12.78	-0.44	-12.78	0.16	12.79	268.03
4498.83	0.45	155.81	4497.88	12.69	-0.74	-12.67	0.31	12.69	266.64
4521.19	0.37	179.07	4520.24	12.67	-0.90	-12.63	0.82	12.67	265.94