



Gyroscopic Survey Report  
for  
KP KAUFMAN

Well Location	WELD, CO
Well Name	DEVORE #1
Rig Number	
Survey Date	11/17/2014
Latitude	40.1326500°N
Longitude	104.8556400°W
North Reference	True North
Grid Correction	None
Depth Reference	GL (4823.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 327.75Azim (deg)
Definitive Survey	DEVORE #1 (05-123-07895)
Operator(s)	C KIRBY

**Well Notes**

API-05-123-07895

# Survey Report

**Well Name:** DEVORE #1  
**Survey:** DEVORE #1 (05-123-07895)  
**Survey Date:** 11/17/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	Closure Distance ft	Closure Direction deg	DLS %/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
86.78	0.17	133.32	86.78	-0.13	-0.09	0.10	0.13	133.32	0.20
122.74	0.15	92.26	122.74	-0.21	-0.13	0.18	0.23	125.37	0.32
147.77	0.18	143.80	147.77	-0.27	-0.16	0.24	0.29	124.25	0.58
173.27	0.23	137.41	173.27	-0.36	-0.23	0.30	0.38	128.04	0.22
198.31	0.15	124.30	198.30	-0.44	-0.29	0.36	0.46	128.79	0.36
223.92	0.16	138.03	223.92	-0.50	-0.34	0.41	0.53	129.15	0.16
249.71	0.14	110.30	249.70	-0.56	-0.37	0.47	0.60	128.74	0.30
274.84	0.15	94.99	274.84	-0.61	-0.39	0.53	0.65	126.28	0.16
296.77	0.14	111.43	296.77	-0.65	-0.40	0.58	0.71	124.49	0.20
323.14	0.08	156.83	323.13	-0.69	-0.43	0.62	0.75	124.65	0.39
348.87	0.07	232.31	348.87	-0.71	-0.45	0.61	0.76	126.39	0.34
370.68	0.08	292.20	370.68	-0.70	-0.45	0.59	0.74	127.61	0.34
397.50	0.18	286.13	397.49	-0.65	-0.44	0.53	0.69	129.31	0.36
420.97	0.26	318.56	420.96	-0.57	-0.39	0.46	0.60	129.89	0.61
448.59	0.36	282.90	448.59	-0.45	-0.32	0.34	0.46	133.61	0.77
471.09	0.39	298.78	471.09	-0.33	-0.27	0.20	0.33	143.23	0.48
498.48	0.38	296.33	498.47	-0.17	-0.18	0.04	0.18	168.92	0.06
520.79	0.45	300.89	520.78	-0.03	-0.10	-0.11	0.15	225.98	0.33
548.08	0.47	287.47	548.08	0.15	-0.01	-0.30	0.31	267.20	0.40
573.91	0.47	288.01	573.90	0.31	0.05	-0.51	0.51	275.57	0.02
596.92	0.47	292.47	596.92	0.46	0.11	-0.68	0.69	279.52	0.16
624.22	0.47	284.60	624.21	0.63	0.19	-0.89	0.91	281.72	0.24
646.50	0.54	286.57	646.50	0.78	0.24	-1.08	1.11	282.42	0.30
673.79	0.54	282.30	673.78	0.97	0.30	-1.33	1.37	282.80	0.15
696.05	0.58	282.60	696.04	1.12	0.35	-1.55	1.58	282.75	0.17
723.31	0.47	278.49	723.30	1.29	0.40	-1.79	1.83	282.48	0.42
746.37	0.64	277.97	746.36	1.44	0.43	-2.01	2.06	282.01	0.75
772.89	0.61	280.48	772.88	1.63	0.47	-2.30	2.35	281.67	0.17
795.86	0.61	268.48	795.85	1.77	0.49	-2.54	2.59	281.00	0.55
823.22	0.59	268.63	823.21	1.92	0.49	-2.82	2.87	279.77	0.07
849.72	0.67	275.49	849.70	2.08	0.50	-3.11	3.15	279.08	0.42
872.66	0.60	272.51	872.64	2.23	0.52	-3.37	3.41	278.70	0.32
899.11	0.59	272.46	899.09	2.39	0.53	-3.64	3.68	278.24	0.03
922.07	0.54	266.69	922.05	2.51	0.53	-3.87	3.91	277.74	0.33
949.29	0.56	273.73	949.26	2.65	0.53	-4.13	4.17	277.28	0.26

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**Survey Date:** 11/17/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	Closure Distance ft	Closure Direction deg	DLS %/100ft
971.49	0.54	265.13	971.46	2.76	0.53	-4.35	4.38	276.90	0.39
999.09	0.50	272.05	999.06	2.89	0.52	-4.60	4.63	276.45	0.27
1022.10	0.45	270.44	1022.07	3.00	0.52	-4.79	4.82	276.24	0.20
1045.74	0.47	279.44	1045.71	3.11	0.54	-4.98	5.01	276.19	0.32
1074.01	0.47	269.29	1073.99	3.25	0.56	-5.21	5.24	276.11	0.30
1096.88	0.46	273.75	1096.85	3.35	0.56	-5.39	5.42	275.96	0.17
1120.53	0.40	272.80	1120.50	3.46	0.57	-5.57	5.60	275.87	0.22
1148.02	0.51	287.26	1147.99	3.61	0.61	-5.78	5.82	276.06	0.58
1171.59	0.55	291.30	1171.56	3.78	0.69	-5.99	6.03	276.54	0.22
1199.83	0.45	287.30	1199.80	3.97	0.77	-6.22	6.27	277.04	0.36
1222.34	0.59	271.64	1222.31	4.10	0.80	-6.42	6.47	277.09	0.86
1249.95	0.52	285.21	1249.92	4.28	0.84	-6.69	6.74	277.13	0.53
1272.30	0.53	300.79	1272.26	4.44	0.92	-6.88	6.94	277.58	0.64
1299.97	0.60	280.11	1299.93	4.65	1.01	-7.13	7.20	278.03	0.77
1322.24	0.57	289.63	1322.20	4.82	1.06	-7.34	7.42	278.24	0.45
1346.66	0.62	280.37	1346.62	5.00	1.13	-7.59	7.67	278.45	0.44
1371.53	0.70	277.42	1371.49	5.19	1.17	-7.87	7.96	278.47	0.34
1397.73	0.67	277.59	1397.69	5.39	1.21	-8.18	8.27	278.43	0.10
1423.06	0.75	281.80	1423.02	5.60	1.27	-8.49	8.59	278.48	0.38
1446.28	0.92	268.15	1446.23	5.80	1.29	-8.83	8.92	278.32	1.11
1474.58	0.91	267.76	1474.53	6.03	1.28	-9.28	9.37	277.82	0.04
1497.66	0.95	269.46	1497.60	6.22	1.27	-9.66	9.74	277.47	0.22
1521.38	0.95	273.69	1521.32	6.44	1.28	-10.05	10.13	277.24	0.30
1549.01	1.02	271.57	1548.95	6.71	1.30	-10.53	10.61	277.03	0.30
1571.97	1.01	273.35	1571.90	6.95	1.32	-10.93	11.01	276.87	0.15
1599.64	1.08	277.86	1599.57	7.26	1.37	-11.43	11.51	276.81	0.38
1623.37	1.12	274.31	1623.29	7.54	1.41	-11.88	11.97	276.78	0.34
1647.10	1.08	278.39	1647.02	7.82	1.46	-12.34	12.42	276.77	0.36
1674.77	1.08	281.22	1674.69	8.17	1.55	-12.85	12.95	276.89	0.19
1698.50	1.05	282.54	1698.41	8.48	1.64	-13.29	13.39	277.05	0.18
1721.57	1.08	281.41	1721.48	8.78	1.73	-13.71	13.82	277.21	0.16
1749.86	1.01	284.40	1749.76	9.14	1.85	-14.21	14.33	277.41	0.33
1774.50	0.99	283.14	1774.40	9.45	1.95	-14.63	14.75	277.59	0.10
1796.71	0.94	287.44	1796.61	9.73	2.05	-14.99	15.13	277.78	0.41
1820.54	0.90	291.58	1820.44	10.03	2.18	-15.35	15.50	278.07	0.32
1847.82	0.87	285.40	1847.71	10.35	2.31	-15.75	15.91	278.34	0.37

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<b>Survey:</b>		DEVORE #1 (05-123-07895)							
<b>Survey Date:</b>		11/17/2014							
MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	Closure Distance ft	Closure Direction deg	DLS %/100ft
1871.89	0.87	295.36	1871.78	10.64	2.44	-16.08	16.27	278.61	0.62
1894.83	0.90	298.92	1894.72	10.95	2.60	-16.40	16.60	279.00	0.27
1923.19	0.89	303.86	1923.07	11.34	2.83	-16.78	17.01	279.56	0.27
1946.89	0.88	295.87	1946.77	11.66	3.01	-17.09	17.35	279.98	0.52
1973.90	1.04	310.87	1973.78	12.07	3.26	-17.46	17.77	280.57	1.10
1997.11	1.15	313.98	1996.98	12.50	3.56	-17.79	18.14	281.31	0.52
2024.16	1.24	312.87	2024.02	13.05	3.95	-18.20	18.62	282.23	0.36
2047.35	1.33	311.18	2047.21	13.55	4.29	-18.59	19.08	283.01	0.42
2070.42	1.50	312.50	2070.27	14.10	4.67	-19.01	19.58	283.81	0.73
2097.58	1.55	309.17	2097.42	14.79	5.15	-19.56	20.22	284.74	0.39
2120.84	1.58	308.04	2120.68	15.39	5.54	-20.05	20.81	285.45	0.18
2148.61	1.68	311.14	2148.43	16.14	6.05	-20.66	21.53	286.31	0.48
2171.03	1.61	304.49	2170.85	16.74	6.44	-21.17	22.13	286.92	0.91
2198.04	1.67	308.32	2197.84	17.46	6.90	-21.79	22.86	287.57	0.47
2224.92	1.69	308.00	2224.71	18.21	7.39	-22.41	23.60	288.24	0.06
2248.21	1.67	307.18	2247.99	18.85	7.80	-22.95	24.24	288.78	0.13
2270.61	1.63	310.71	2270.38	19.46	8.21	-23.45	24.85	289.29	0.49
2298.32	1.61	310.99	2298.08	20.20	8.72	-24.04	25.58	289.93	0.08
2320.72	1.58	307.91	2320.47	20.79	9.11	-24.52	26.16	290.39	0.40
2348.43	1.71	317.15	2348.17	21.56	9.65	-25.11	26.90	291.03	1.06
2371.53	1.64	312.02	2371.26	22.22	10.13	-25.59	27.52	291.59	0.72
2398.49	1.67	317.72	2398.21	22.97	10.67	-26.14	28.23	292.21	0.62
2421.63	1.71	317.24	2421.34	23.65	11.18	-26.60	28.85	292.79	0.19
2449.32	1.79	316.94	2449.02	24.48	11.80	-27.18	29.63	293.47	0.29
2471.68	1.81	321.18	2471.36	25.17	12.33	-27.64	30.26	294.04	0.60
2499.32	1.84	317.27	2498.99	26.05	13.00	-28.21	31.06	294.73	0.46
2521.69	1.91	317.93	2521.34	26.77	13.54	-28.71	31.74	295.25	0.30
2549.36	1.80	316.89	2549.01	27.65	14.20	-29.31	32.57	295.84	0.43
2572.44	1.88	318.31	2572.07	28.37	14.74	-29.81	33.26	296.32	0.42
2599.34	1.81	315.41	2598.96	29.22	15.37	-30.40	34.07	296.83	0.44
2622.46	1.76	316.38	2622.07	29.93	15.89	-30.90	34.75	297.21	0.25
2649.35	1.78	314.93	2648.95	30.74	16.48	-31.48	35.53	297.64	0.19
2672.39	1.60	316.60	2671.98	31.40	16.97	-31.95	36.18	297.97	0.82
2699.47	1.56	317.81	2699.05	32.14	17.52	-32.46	36.89	298.35	0.17
2721.30	1.52	318.53	2720.87	32.72	17.96	-32.85	37.44	298.66	0.22
2748.35	1.48	320.03	2747.91	33.42	18.49	-33.32	38.10	299.03	0.20

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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
2770.94	1.40	322.59	2770.49	33.98	18.93	-33.67	38.63	299.35	0.47
2797.26	1.35	325.12	2796.80	34.61	19.44	-34.04	39.21	299.73	0.28
2824.40	1.25	332.00	2823.94	35.23	19.97	-34.37	39.75	300.16	0.69
2846.25	1.42	336.17	2845.78	35.73	20.43	-34.59	40.17	300.56	0.88
2873.30	1.21	333.65	2872.82	36.34	20.99	-34.85	40.68	301.06	0.80
2895.75	1.29	342.86	2895.27	36.82	21.44	-35.03	41.07	301.47	0.96
2922.20	1.31	341.36	2921.71	37.40	22.01	-35.21	41.52	302.01	0.15
2949.15	1.19	344.08	2948.66	37.97	22.57	-35.39	41.97	302.53	0.48
2973.86	1.31	350.43	2973.36	38.48	23.10	-35.51	42.36	303.04	0.73
2996.56	1.26	343.19	2996.06	38.96	23.59	-35.62	42.72	303.52	0.75
3022.78	1.33	345.30	3022.27	39.53	24.16	-35.78	43.18	304.03	0.32
3049.84	1.36	344.35	3049.32	40.13	24.78	-35.95	43.66	304.58	0.15
3070.99	1.34	345.91	3070.46	40.61	25.26	-36.08	44.04	305.00	0.20
3098.05	1.36	339.55	3097.52	41.23	25.87	-36.27	44.55	305.50	0.56
3120.67	1.38	347.11	3120.13	41.75	26.39	-36.42	44.97	305.92	0.81
3146.98	1.33	345.84	3146.43	42.34	26.99	-36.57	45.45	306.43	0.24
3174.08	1.34	337.93	3173.53	42.95	27.59	-36.76	45.96	306.89	0.68
3195.97	1.67	342.23	3195.41	43.51	28.13	-36.96	46.44	307.28	1.61
3223.06	1.29	335.31	3222.48	44.19	28.78	-37.20	47.04	307.73	1.55
3249.99	1.39	344.89	3249.41	44.81	29.37	-37.42	47.57	308.13	0.91
3271.75	1.40	345.40	3271.16	45.31	29.89	-37.55	47.99	308.52	0.09
3298.87	1.48	347.31	3298.27	45.96	30.55	-37.71	48.53	309.01	0.32
3321.66	1.36	351.76	3321.06	46.48	31.10	-37.81	48.96	309.44	0.72
3347.88	1.31	346.18	3347.27	47.05	31.70	-37.93	49.43	309.89	0.52
3374.92	1.26	358.14	3374.30	47.60	32.30	-38.01	49.88	310.35	1.01
3397.30	1.34	2.26	3396.68	48.03	32.80	-38.01	50.21	310.79	0.54
3423.02	1.33	1.06	3422.39	48.52	33.40	-37.99	50.59	311.32	0.11
3449.50	1.32	18.19	3448.86	48.97	34.00	-37.89	50.91	311.90	1.49
3470.89	1.32	18.11	3470.25	49.29	34.47	-37.74	51.11	312.40	0.02
3497.42	1.26	15.16	3496.77	49.68	35.04	-37.57	51.37	313.01	0.33
3523.77	1.25	13.25	3523.11	50.08	35.60	-37.43	51.65	313.57	0.16
3549.51	1.44	13.51	3548.85	50.50	36.19	-37.29	51.96	314.14	0.71
3571.60	1.37	26.97	3570.93	50.83	36.69	-37.10	52.18	314.68	1.52
3598.05	1.39	19.50	3597.37	51.19	37.28	-36.85	52.42	315.33	0.68
3623.09	1.15	2.38	3622.40	51.58	37.81	-36.74	52.72	315.82	1.78
3649.37	1.07	25.68	3648.68	51.93	38.30	-36.62	52.99	316.28	1.73

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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
3670.85	1.17	18.44	3670.16	52.18	38.69	-36.47	53.17	316.69	0.83
3697.18	1.19	10.37	3696.49	52.55	39.21	-36.33	53.46	317.18	0.63
3723.61	1.03	0.86	3722.91	52.95	39.72	-36.28	53.79	317.59	0.91
3749.33	0.80	347.15	3748.62	53.31	40.13	-36.32	54.12	317.85	1.24
3774.89	0.88	345.38	3774.18	53.67	40.49	-36.41	54.45	318.04	0.32
3796.34	0.85	0.88	3795.64	53.96	40.81	-36.44	54.71	318.23	1.09
3822.67	0.81	357.13	3821.96	54.28	41.19	-36.45	55.00	318.49	0.25
3848.96	0.74	344.46	3848.24	54.61	41.54	-36.51	55.30	318.69	0.71
3874.73	0.84	351.30	3874.02	54.94	41.88	-36.58	55.61	318.87	0.54
3895.94	0.81	354.30	3895.22	55.22	42.19	-36.62	55.86	319.04	0.23
3921.55	0.89	1.47	3920.83	55.54	42.57	-36.63	56.16	319.29	0.52
3948.28	0.90	5.67	3947.56	55.88	42.98	-36.60	56.46	319.58	0.25
3974.48	0.83	1.22	3973.75	56.20	43.38	-36.58	56.74	319.86	0.39
3996.90	1.03	14.61	3996.17	56.48	43.73	-36.52	56.98	320.13	1.30
4023.67	1.04	17.65	4022.93	56.80	44.20	-36.39	57.25	320.53	0.22
4049.86	1.07	19.58	4049.12	57.10	44.66	-36.24	57.51	320.94	0.18
4072.17	1.14	20.54	4071.42	57.37	45.06	-36.09	57.73	321.31	0.29
4098.15	1.26	22.62	4097.40	57.69	45.57	-35.89	58.00	321.78	0.50
4124.50	1.35	21.05	4123.75	58.04	46.12	-35.66	58.30	322.29	0.38
4146.46	1.37	20.46	4145.70	58.35	46.61	-35.48	58.58	322.72	0.12
4172.05	1.51	13.37	4171.28	58.77	47.23	-35.29	58.96	323.23	0.87
4198.35	1.50	9.96	4197.57	59.27	47.90	-35.16	59.42	323.73	0.34
4223.12	1.61	12.16	4222.33	59.76	48.56	-35.03	59.87	324.20	0.53
4249.43	1.47	12.35	4248.63	60.26	49.25	-34.88	60.35	324.70	0.56
4274.62	1.63	10.78	4273.81	60.75	49.92	-34.74	60.82	325.16	0.66
4295.99	1.59	0.75	4295.17	61.22	50.51	-34.68	61.27	325.53	1.33
4322.30	1.70	0.61	4321.48	61.86	51.27	-34.67	61.89	325.93	0.43
4348.03	1.63	353.48	4347.19	62.51	52.01	-34.71	62.53	326.28	0.86
4374.22	1.63	347.78	4373.37	63.19	52.74	-34.83	63.21	326.56	0.62
4399.63	1.63	346.29	4398.77	63.88	53.45	-34.99	63.88	326.79	0.17
4421.02	1.72	349.51	4420.15	64.46	54.06	-35.12	64.47	326.99	0.63
4447.20	1.60	338.93	4446.32	65.19	54.79	-35.33	65.19	327.19	1.26
4472.17	1.72	339.53	4471.28	65.89	55.46	-35.58	65.90	327.32	0.48
4496.59	1.64	338.50	4495.69	66.60	56.13	-35.84	66.60	327.44	0.32
4523.08	1.82	337.30	4522.17	67.39	56.88	-36.14	67.39	327.57	0.69
4546.88	1.75	335.74	4545.95	68.12	57.56	-36.43	68.12	327.66	0.39



Well Name: DEVORE #1  
Survey: DEVORE #1 (05-123-07895)  
Survey Date: 11/17/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	Closure Distance ft	Closure Direction deg	DLS °/100ft
4572.16	1.77	331.33	4571.23	68.89	58.25	-36.78	68.89	327.73	0.54
4610.24	1.91	326.94	4609.28	70.11	59.30	-37.41	70.11	327.75	0.52