



Gyroscopic Survey Report
for
K.P. KAUFFMAN
1675 BROADWAY SUITE 2800
DENVER, CO 80202

Well Location	WELD COUNTY, CO
Well Name	JACOBUCCI #1
Rig Number	NABORS 92-0438
Survey Date	7/22/2014
Latitude	40.0131500°N
Longitude	104.9214400°W
North Reference	True North
Grid Correction	None
Depth Reference	GROUND LEVEL (5024.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 304.23Azim (deg)
Definitive Survey	JACOBUCCI #1
Operator(s)	C JAQUES, C KIRBY

Well Notes

Survey Report

Well Name: JACOBUCCI #1
Survey: OUTRUN
Survey Date: 7/22/2014

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
99.34	0.35	344.00	99.34	0.23	0.29	-0.08	0.35	0.30	344.00
124.29	0.38	343.70	124.29	0.35	0.44	-0.13	0.12	0.46	343.95
149.03	0.34	329.04	149.03	0.48	0.58	-0.19	0.40	0.61	342.15
174.08	0.37	338.40	174.08	0.62	0.72	-0.26	0.27	0.77	340.50
199.09	0.45	333.14	199.09	0.77	0.89	-0.33	0.35	0.95	339.55
224.52	0.38	313.95	224.52	0.94	1.04	-0.44	0.61	1.12	337.10
249.10	0.22	302.90	249.10	1.07	1.12	-0.54	0.71	1.24	334.40
274.44	0.57	338.96	274.43	1.22	1.26	-0.62	1.62	1.41	333.78
299.38	0.36	342.06	299.38	1.39	1.45	-0.69	0.82	1.61	334.58
324.63	0.34	316.64	324.62	1.52	1.58	-0.77	0.62	1.76	334.16
349.99	0.39	332.07	349.99	1.67	1.71	-0.86	0.43	1.91	333.39
374.66	0.39	321.48	374.66	1.83	1.85	-0.95	0.29	2.08	332.86
399.16	0.40	319.25	399.15	1.99	1.98	-1.06	0.09	2.25	331.93
424.47	0.37	321.08	424.47	2.15	2.11	-1.17	0.16	2.41	331.10
449.90	0.34	307.90	449.89	2.30	2.22	-1.28	0.33	2.56	330.11
474.32	0.37	301.37	474.31	2.46	2.31	-1.40	0.19	2.70	328.73
499.03	0.37	299.63	499.02	2.61	2.39	-1.54	0.05	2.84	327.21
523.95	0.39	300.63	523.94	2.78	2.47	-1.68	0.06	2.99	325.78
548.37	0.45	297.92	548.36	2.95	2.56	-1.83	0.26	3.15	324.33
574.38	0.47	291.32	574.37	3.16	2.64	-2.02	0.22	3.33	322.56
599.23	0.50	289.20	599.21	3.36	2.72	-2.22	0.15	3.51	320.72
624.04	0.55	287.23	624.02	3.58	2.79	-2.44	0.20	3.70	318.83
648.39	0.54	289.41	648.37	3.80	2.86	-2.66	0.09	3.90	317.11
674.58	0.53	285.62	674.56	4.04	2.93	-2.89	0.14	4.11	315.44
699.35	0.48	286.38	699.34	4.24	2.99	-3.10	0.20	4.30	314.02
724.11	0.51	287.99	724.09	4.45	3.05	-3.30	0.13	4.50	312.80
748.56	0.50	293.44	748.55	4.65	3.13	-3.50	0.20	4.69	311.82
773.80	0.43	280.39	773.79	4.85	3.19	-3.69	0.50	4.88	310.83
799.83	0.46	279.66	799.81	5.03	3.23	-3.89	0.13	5.06	309.65
824.70	0.49	275.58	824.68	5.22	3.25	-4.10	0.17	5.23	308.45
849.57	0.45	277.32	849.55	5.40	3.28	-4.30	0.15	5.41	307.31
873.89	0.44	257.60	873.87	5.55	3.27	-4.48	0.63	5.55	306.08
899.94	0.40	253.70	899.92	5.67	3.22	-4.67	0.19	5.67	304.62
924.84	0.41	244.84	924.81	5.77	3.16	-4.83	0.26	5.77	303.19
949.63	0.34	258.50	949.61	5.87	3.11	-4.98	0.46	5.87	301.96

Survey Report

Well Name: JACOBUCCI #1
Survey: OTRUN
Survey Date: 7/22/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
974.84	0.39	259.44	974.81	5.98	3.08	-5.14	0.21	5.99	300.92
999.60	0.36	244.59	999.58	6.08	3.03	-5.29	0.41	6.10	299.79
1024.34	0.33	253.27	1024.31	6.16	2.98	-5.43	0.23	6.19	298.72
1048.69	0.27	250.93	1048.66	6.24	2.94	-5.55	0.25	6.28	297.87
1074.71	0.35	239.66	1074.68	6.31	2.88	-5.68	0.38	6.37	296.85
1099.32	0.30	238.63	1099.29	6.37	2.80	-5.80	0.19	6.44	295.80
1124.21	0.37	228.82	1124.19	6.42	2.72	-5.92	0.34	6.51	294.66
1149.49	0.38	227.62	1149.47	6.46	2.61	-6.04	0.07	6.58	293.34
1174.54	0.32	238.48	1174.51	6.51	2.51	-6.16	0.36	6.65	292.19
1199.32	0.32	247.26	1199.29	6.57	2.45	-6.28	0.20	6.74	291.30
1223.97	0.39	232.37	1223.94	6.64	2.37	-6.41	0.47	6.84	290.30
1249.42	0.44	233.67	1249.39	6.70	2.26	-6.56	0.19	6.94	289.03
1274.47	0.42	233.75	1274.44	6.76	2.15	-6.71	0.06	7.05	287.77
1299.84	0.43	227.84	1299.81	6.81	2.03	-6.86	0.18	7.15	286.50
1324.08	0.32	240.17	1324.05	6.86	1.94	-6.98	0.56	7.25	285.49
1349.60	0.35	228.87	1349.56	6.91	1.85	-7.10	0.28	7.34	284.59
1373.84	0.30	224.00	1373.81	6.94	1.76	-7.21	0.21	7.42	283.69
1398.96	0.29	269.89	1398.93	7.01	1.71	-7.32	0.93	7.51	283.13
1424.33	0.31	273.81	1424.30	7.12	1.71	-7.45	0.10	7.64	282.94
1449.42	0.39	254.32	1449.38	7.23	1.69	-7.60	0.56	7.78	282.56
1473.78	0.33	252.27	1473.74	7.33	1.65	-7.74	0.23	7.92	282.02
1524.12	0.48	244.65	1524.08	7.53	1.51	-8.07	0.31	8.22	280.62
1549.60	0.53	241.58	1549.57	7.64	1.41	-8.27	0.21	8.39	279.69
1573.87	0.55	236.88	1573.83	7.73	1.30	-8.47	0.21	8.57	278.70
1598.95	0.42	217.27	1598.91	7.78	1.16	-8.63	0.83	8.71	277.63
1624.47	0.36	226.96	1624.43	7.81	1.03	-8.74	0.37	8.80	276.69
1649.98	0.30	237.94	1649.94	7.85	0.94	-8.86	0.33	8.91	276.03
1674.64	0.42	245.25	1674.60	7.92	0.86	-8.99	0.51	9.04	275.49
1699.77	0.41	246.40	1699.73	8.02	0.79	-9.16	0.06	9.19	274.94
1724.80	0.47	243.61	1724.76	8.11	0.71	-9.33	0.27	9.36	274.35
1749.90	0.64	230.95	1749.86	8.21	0.58	-9.53	0.83	9.55	273.46
1774.87	0.66	231.15	1774.82	8.29	0.40	-9.75	0.06	9.76	272.34
1799.61	0.63	233.57	1799.56	8.37	0.23	-9.97	0.15	9.97	271.31
1824.33	0.66	235.01	1824.28	8.47	0.07	-10.20	0.13	10.20	270.37
1849.88	0.70	230.11	1849.83	8.56	-0.12	-10.44	0.27	10.44	269.35
1875.00	0.65	240.02	1874.95	8.67	-0.29	-10.68	0.50	10.68	268.45

Survey Report

Well Name:		JACOBUCCI #1							
Survey:		OUTRUN							
Survey Date:		7/22/2014							
MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
1898.78	0.64	240.61	1898.73	8.79	-0.42	-10.91	0.04	10.92	267.79
1923.79	0.67	240.58	1923.73	8.91	-0.56	-11.16	0.10	11.18	267.12
1949.74	0.70	238.13	1949.68	9.04	-0.72	-11.43	0.17	11.45	266.39
1974.37	0.85	230.55	1974.32	9.16	-0.92	-11.70	0.74	11.74	265.52
1999.74	0.75	228.97	1999.68	9.25	-1.15	-11.97	0.42	12.03	264.53
2024.75	0.82	224.28	2024.68	9.33	-1.38	-12.22	0.36	12.30	263.55
2049.64	0.76	228.47	2049.58	9.40	-1.62	-12.47	0.33	12.57	262.61
2073.78	0.81	226.90	2073.71	9.47	-1.84	-12.71	0.24	12.84	261.77
2098.80	0.77	231.24	2098.73	9.56	-2.06	-12.97	0.29	13.13	260.96
2124.27	0.74	235.28	2124.20	9.67	-2.26	-13.24	0.23	13.43	260.29
2149.63	0.78	235.62	2149.56	9.79	-2.46	-13.51	0.16	13.74	259.70
2173.80	0.82	242.26	2173.72	9.93	-2.63	-13.80	0.41	14.05	259.22
2199.66	0.88	240.78	2199.59	10.11	-2.81	-14.14	0.25	14.42	258.75
2224.58	0.88	251.82	2224.50	10.31	-2.97	-14.49	0.68	14.79	258.43
2248.80	0.93	256.82	2248.72	10.56	-3.07	-14.86	0.38	15.17	258.33
2274.16	0.89	262.88	2274.07	10.85	-3.14	-15.25	0.41	15.57	258.37
2299.12	0.90	264.90	2299.03	11.14	-3.18	-15.64	0.13	15.96	258.50
2324.70	0.90	275.29	2324.60	11.47	-3.18	-16.04	0.63	16.35	258.78
2349.68	0.83	287.81	2349.59	11.82	-3.11	-16.41	0.80	16.70	259.28
2374.61	0.89	291.18	2374.51	12.18	-2.98	-16.76	0.31	17.02	259.91
2398.75	0.97	282.96	2398.65	12.55	-2.87	-17.13	0.66	17.37	260.50
2424.23	0.90	301.48	2424.13	12.95	-2.72	-17.51	1.22	17.72	261.19
2449.25	0.91	297.86	2449.14	13.35	-2.52	-17.86	0.23	18.03	261.97
2474.61	0.97	295.42	2474.50	13.76	-2.33	-18.23	0.30	18.38	262.71
2498.60	0.87	302.74	2498.49	14.14	-2.15	-18.57	0.66	18.69	263.40
2524.95	0.79	302.54	2524.83	14.53	-1.94	-18.89	0.29	18.99	264.13
2549.19	0.93	303.28	2549.07	14.89	-1.74	-19.19	0.58	19.27	264.81
2574.97	0.77	294.07	2574.85	15.27	-1.56	-19.53	0.81	19.59	265.44
2599.11	0.90	309.49	2598.98	15.62	-1.37	-19.82	1.06	19.87	266.04
2624.04	0.84	316.15	2623.91	15.99	-1.12	-20.10	0.47	20.13	266.82
2649.44	0.91	306.59	2649.31	16.37	-0.86	-20.39	0.63	20.41	267.58
2674.85	0.75	312.12	2674.72	16.74	-0.63	-20.67	0.70	20.68	268.25
2699.93	0.87	311.54	2699.79	17.09	-0.39	-20.94	0.49	20.94	268.92
2724.90	0.74	310.29	2724.76	17.44	-0.16	-21.20	0.51	21.20	269.56
2749.79	0.84	305.81	2749.65	17.78	0.05	-21.48	0.47	21.48	270.13
2774.56	0.79	323.39	2774.41	18.13	0.29	-21.72	1.03	21.73	270.77

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
2799.46	0.84	318.18	2799.32	18.47	0.57	-21.95	0.35	21.96	271.48
2824.40	0.89	330.80	2824.24	18.82	0.87	-22.16	0.79	22.18	272.25
2848.89	0.94	330.37	2848.73	19.17	1.21	-22.36	0.20	22.39	273.10
2874.99	0.94	336.18	2874.83	19.54	1.59	-22.55	0.37	22.61	274.04
2899.91	1.05	329.91	2899.75	19.92	1.98	-22.75	0.61	22.83	274.97
2924.81	0.93	332.25	2924.64	20.30	2.35	-22.95	0.51	23.08	275.86
2949.31	1.07	328.69	2949.14	20.69	2.73	-23.17	0.64	23.33	276.71
2974.18	0.90	330.11	2974.00	21.07	3.09	-23.38	0.71	23.59	277.54
2999.11	0.86	324.21	2998.94	21.43	3.42	-23.59	0.39	23.84	278.24
3024.06	0.98	332.80	3023.88	21.79	3.76	-23.80	0.74	24.09	278.97
3049.75	1.02	327.78	3049.57	22.19	4.15	-24.02	0.37	24.38	279.79
3073.85	0.93	332.04	3073.66	22.56	4.50	-24.23	0.46	24.64	280.52
3098.72	0.89	333.73	3098.53	22.91	4.85	-24.41	0.20	24.89	281.25
3123.82	0.98	330.26	3123.62	23.27	5.21	-24.60	0.41	25.15	281.97
3149.99	0.81	332.73	3149.79	23.64	5.57	-24.80	0.65	25.42	282.67
3174.49	0.86	335.86	3174.29	23.95	5.89	-24.95	0.27	25.64	283.29
3199.42	0.89	330.02	3199.22	24.28	6.23	-25.12	0.38	25.89	283.93
3224.38	0.78	333.00	3224.17	24.60	6.55	-25.30	0.49	26.13	284.52
3248.92	0.80	339.71	3248.71	24.89	6.86	-25.43	0.39	26.34	285.10
3273.90	0.67	337.74	3273.70	25.15	7.16	-25.55	0.52	26.53	285.66
3299.74	0.65	357.60	3299.53	25.37	7.45	-25.61	0.89	26.67	286.21
3324.25	0.47	350.03	3324.04	25.52	7.69	-25.64	0.78	26.76	286.69
3349.24	0.68	4.56	3349.03	25.67	7.94	-25.64	0.99	26.84	287.20
3374.27	0.51	4.26	3374.06	25.79	8.19	-25.62	0.69	26.90	287.73
3399.32	0.62	5.77	3399.11	25.91	8.44	-25.60	0.47	26.96	288.25
3423.82	0.68	4.87	3423.61	26.05	8.72	-25.58	0.26	27.02	288.82
3448.86	0.65	12.07	3448.64	26.18	9.01	-25.53	0.36	27.07	289.43
3473.84	0.69	13.05	3473.62	26.28	9.29	-25.47	0.16	27.11	290.04
3499.09	0.78	6.43	3498.87	26.42	9.61	-25.42	0.50	27.17	290.71
3524.75	0.74	9.62	3524.53	26.57	9.95	-25.37	0.23	27.25	291.41
3549.99	0.85	10.31	3549.76	26.71	10.29	-25.31	0.44	27.32	292.13
3574.35	0.84	16.37	3574.12	26.84	10.64	-25.22	0.37	27.38	292.87
3599.77	0.84	17.71	3599.54	26.95	11.00	-25.12	0.08	27.42	293.65
3623.80	0.76	28.65	3623.56	27.02	11.31	-24.99	0.71	27.42	294.35
3649.57	0.85	25.29	3649.33	27.06	11.63	-24.82	0.36	27.41	295.10
3674.09	0.86	33.08	3673.85	27.10	11.95	-24.64	0.47	27.39	295.86

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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
3699.77	0.93	31.80	3699.52	27.11	12.28	-24.43	0.29	27.34	296.69
3724.69	0.72	41.19	3724.44	27.10	12.57	-24.22	1.00	27.29	297.43
3749.19	0.65	45.23	3748.94	27.05	12.79	-24.02	0.33	27.21	298.02
3774.48	0.57	47.95	3774.23	26.99	12.97	-23.82	0.33	27.13	298.57
3799.81	0.50	60.25	3799.56	26.92	13.11	-23.64	0.54	27.03	299.02
3824.26	0.65	31.79	3824.01	26.88	13.28	-23.47	1.30	26.97	299.51
3848.27	0.58	40.46	3848.02	26.87	13.49	-23.32	0.47	26.94	300.05
3874.93	0.56	34.25	3874.67	26.85	13.70	-23.16	0.25	26.91	300.61
3899.06	0.42	32.52	3898.80	26.86	13.88	-23.04	0.58	26.90	301.06
3924.75	0.36	29.53	3924.49	26.87	14.03	-22.95	0.26	26.90	301.43
3948.85	0.44	55.56	3948.59	26.84	14.15	-22.84	0.82	26.86	301.78
3975.00	0.38	63.77	3974.74	26.76	14.24	-22.67	0.32	26.78	302.13
3999.03	0.50	73.53	3998.77	26.65	14.31	-22.50	0.57	26.67	302.45
4024.81	0.61	75.65	4024.56	26.49	14.37	-22.26	0.46	26.50	302.85
4048.92	0.71	39.78	4048.66	26.39	14.52	-22.04	1.74	26.39	303.38
4074.67	0.49	16.41	4074.41	26.41	14.75	-21.91	1.26	26.41	303.95
4099.96	0.07	6.30	4099.70	26.45	14.87	-21.87	1.70	26.45	304.21
4124.22	0.21	33.96	4123.96	26.46	14.92	-21.85	0.62	26.46	304.33
4148.84	0.43	32.89	4148.58	26.46	15.03	-21.77	0.90	26.46	304.62
4174.63	0.31	43.28	4174.36	26.45	15.16	-21.67	0.53	26.45	304.98
4198.73	0.30	47.96	4198.47	26.42	15.25	-21.58	0.11	26.43	305.25
4224.23	0.25	50.35	4223.96	26.39	15.33	-21.49	0.18	26.40	305.51
4249.34	0.21	45.67	4249.08	26.37	15.40	-21.41	0.20	26.38	305.73
4274.56	0.19	55.89	4274.30	26.34	15.46	-21.35	0.16	26.35	305.91
4299.83	0.24	63.24	4299.56	26.30	15.50	-21.26	0.22	26.32	306.10
4323.85	0.25	68.19	4323.59	26.25	15.55	-21.17	0.10	26.27	306.29
4348.62	0.23	24.42	4348.36	26.23	15.61	-21.10	0.72	26.25	306.49
4374.99	0.19	17.06	4374.72	26.25	15.70	-21.07	0.16	26.27	306.69
4399.03	0.14	72.79	4398.76	26.24	15.75	-21.03	0.67	26.27	306.83
4424.31	0.11	82.83	4424.05	26.21	15.76	-20.98	0.13	26.24	306.92
4449.52	0.10	79.29	4449.25	26.17	15.77	-20.93	0.03	26.20	306.99
4474.73	0.12	127.82	4474.46	26.13	15.75	-20.89	0.36	26.16	307.03
4498.33	0.09	154.90	4498.06	26.09	15.72	-20.86	0.23	26.12	307.01
4524.77	0.33	177.99	4524.51	26.03	15.63	-20.85	0.97	26.06	306.85
4548.96	0.29	185.06	4548.70	25.96	15.50	-20.85	0.23	25.98	306.62
4574.22	0.11	198.50	4573.95	25.92	15.41	-20.87	0.76	25.94	306.45

Well Name: JACOBUCCI #1
Survey: OUTRUN
Survey Date: 7/22/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
4599.47	0.29	199.62	4599.21	25.90	15.33	-20.89	0.74	25.91	306.26
4624.90	0.17	184.13	4624.63	25.86	15.23	-20.92	0.54	25.87	306.05
4648.59	0.23	245.41	4648.33	25.87	15.17	-20.96	0.88	25.88	305.90
4673.87	0.35	221.44	4673.61	25.90	15.10	-21.06	0.66	25.91	305.63
4699.19	0.27	243.43	4698.92	25.94	15.01	-21.16	0.55	25.95	305.35
4724.14	0.27	263.42	4723.87	26.02	14.98	-21.28	0.38	26.02	305.15
4749.59	0.38	200.81	4749.32	26.04	14.89	-21.36	1.38	26.04	304.88
4774.87	0.32	176.26	4774.60	25.98	14.74	-21.39	0.63	25.98	304.58
4799.14	0.27	169.06	4798.87	25.90	14.62	-21.37	0.28	25.90	304.37
4823.95	0.15	169.23	4823.69	25.83	14.53	-21.36	0.47	25.83	304.23