



SUMMIT
OILFIELD SERVICES, INC

Company: Bonanza Creek
Lease/Well: Guttersen Ranch 12-9
County/State: Weld/CO

Job Number: 7404-512326186
Date: 2-26-19
Survey Type: Memory
Declination: 9.40

Instrument Number: GP1-1000
North Reference: True North
Survey Engineer: Nathan Proffitt

Summit Oilfield Services

*Minimum Curvature Method
Vertical Section Plane: 0.00
Vertical Section Reference:
Rectangular Coordinates Reference:*

Measured Depth	Indin	Azimuth	Course Length	True Vertical Depth	N[+]/S[-]	E[+]/W[-]	Vertical Section	Dogleg Severity	Closure Distance	Closure Direction
0.00 ft	0.00	0.00	0.00 ft	0.00 ft	0.00 ft	0.00 ft	0.00 ft	0.00/100 ft	0.00 ft	0.00
100.00 ft	1.41	154.96	100.00 ft	99.99 ft	-1.12 ft	0.52 ft	-1.12 ft	1.41/100 ft	1.23 ft	154.96
200.00 ft	0.83	120.83	100.00 ft	199.97 ft	-2.60 ft	1.67 ft	-2.60 ft	0.86/100 ft	3.09 ft	147.37
300.00 ft	0.90	149.44	100.00 ft	299.96 ft	-3.65 ft	2.69 ft	-3.65 ft	0.43/100 ft	4.54 ft	143.62
400.00 ft	0.84	160.28	100.00 ft	399.95 ft	-5.02 ft	3.34 ft	-5.02 ft	0.18/100 ft	6.03 ft	146.37
500.00 ft	1.02	231.45	100.00 ft	499.94 ft	-6.26 ft	2.89 ft	-6.26 ft	1.09/100 ft	6.90 ft	155.22
600.00 ft	1.03	238.68	100.00 ft	599.92 ft	-7.28 ft	1.43 ft	-7.28 ft	0.13/100 ft	7.42 ft	168.87
700.00 ft	0.22	353.36	100.00 ft	699.92 ft	-7.56 ft	0.65 ft	-7.56 ft	1.13/100 ft	7.58 ft	175.11
800.00 ft	0.74	273.40	100.00 ft	799.91 ft	-7.33 ft	-0.02 ft	-7.33 ft	0.74/100 ft	7.33 ft	180.17
900.00 ft	1.03	222.18	100.00 ft	899.90 ft	-7.95 ft	-1.27 ft	-7.95 ft	0.81/100 ft	8.05 ft	189.06
1000.00 ft	1.08	261.19	100.00 ft	999.89 ft	-8.76 ft	-2.80 ft	-8.76 ft	0.70/100 ft	9.20 ft	197.73
1100.00 ft	1.08	233.17	100.00 ft	1099.87 ft	-9.47 ft	-4.49 ft	-9.47 ft	0.52/100 ft	10.48 ft	205.35
1200.00 ft	0.80	202.55	100.00 ft	1199.86 ft	-10.68 ft	-5.51 ft	-10.68 ft	0.57/100 ft	12.02 ft	207.30
1300.00 ft	0.81	288.85	100.00 ft	1299.85 ft	-11.10 ft	-6.45 ft	-11.10 ft	1.10/100 ft	12.83 ft	210.15
1400.00 ft	1.07	221.70	100.00 ft	1399.84 ft	-11.57 ft	-7.74 ft	-11.57 ft	1.06/100 ft	13.91 ft	213.77



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Declination: 9.40

Instrument Number: GP1-1000
North Reference: True North
Survey Engineer: Nathan Proffitt

Measured Depth	Inclin	Azimuth	Course Length	True Vertical Depth	N[+]/S[-]	E[+]/W[-]	Vertical Section	Dogleg Severity	Closure Distance	Closure Direction
1500.00 ft	0.50	193.39	100.00 ft	1499.83 ft	-12.69 ft	-8.46 ft	-12.69 ft	0.67/100 ft	15.25 ft	213.69
1600.00 ft	0.54	302.30	100.00 ft	1599.83 ft	-12.86 ft	-8.96 ft	-12.86 ft	0.85/100 ft	15.67 ft	214.87
1700.00 ft	0.17	316.04	100.00 ft	1699.83 ft	-12.50 ft	-9.46 ft	-12.50 ft	0.38/100 ft	15.68 ft	217.14
1800.00 ft	0.75	265.34	100.00 ft	1799.82 ft	-12.44 ft	-10.22 ft	-12.44 ft	0.65/100 ft	16.10 ft	219.40
1900.00 ft	0.62	83.20	100.00 ft	1899.82 ft	-12.43 ft	-10.33 ft	-12.43 ft	1.37/100 ft	16.16 ft	219.73
2000.00 ft	0.99	31.60	100.00 ft	1999.81 ft	-11.63 ft	-9.34 ft	-11.63 ft	0.78/100 ft	14.91 ft	218.77
2100.00 ft	0.42	80.64	100.00 ft	2099.80 ft	-10.83 ft	-8.52 ft	-10.83 ft	0.79/100 ft	13.78 ft	218.21
2200.00 ft	0.89	353.07	100.00 ft	2199.80 ft	-10.00 ft	-8.26 ft	-10.00 ft	0.97/100 ft	12.97 ft	219.55
2300.00 ft	0.67	358.25	100.00 ft	2299.79 ft	-8.65 ft	-8.37 ft	-8.65 ft	0.23/100 ft	12.03 ft	224.06
2400.00 ft	1.27	52.22	100.00 ft	2399.78 ft	-7.39 ft	-7.51 ft	-7.39 ft	1.03/100 ft	10.53 ft	225.47
2500.00 ft	0.96	345.08	100.00 ft	2499.76 ft	-5.89 ft	-6.85 ft	-5.89 ft	1.26/100 ft	9.03 ft	229.27
2600.00 ft	1.65	18.22	100.00 ft	2599.74 ft	-3.72 ft	-6.61 ft	-3.72 ft	1.00/100 ft	7.58 ft	240.66
2700.00 ft	1.06	350.76	100.00 ft	2699.71 ft	-1.44 ft	-6.31 ft	-1.44 ft	0.86/100 ft	6.47 ft	257.17
2800.00 ft	1.47	19.25	100.00 ft	2799.69 ft	0.69 ft	-6.03 ft	0.69 ft	0.74/100 ft	6.07 ft	276.51
2900.00 ft	2.42	3.82	100.00 ft	2899.63 ft	4.01 ft	-5.47 ft	4.01 ft	1.07/100 ft	6.78 ft	306.23
3000.00 ft	2.50	357.24	100.00 ft	2999.54 ft	8.29 ft	-5.43 ft	8.29 ft	0.29/100 ft	9.91 ft	326.75
3100.00 ft	2.30	354.66	100.00 ft	3099.45 ft	12.46 ft	-5.72 ft	12.46 ft	0.22/100 ft	13.71 ft	335.33
3200.00 ft	1.85	32.79	100.00 ft	3199.39 ft	15.82 ft	-5.04 ft	15.82 ft	1.42/100 ft	16.60 ft	342.33
3300.00 ft	1.87	15.04	100.00 ft	3299.34 ft	18.75 ft	-3.74 ft	18.75 ft	0.57/100 ft	19.12 ft	348.72
3400.00 ft	0.96	45.92	100.00 ft	3399.30 ft	20.92 ft	-2.71 ft	20.92 ft	1.16/100 ft	21.09 ft	352.61
3500.00 ft	1.41	20.85	100.00 ft	3499.28 ft	22.65 ft	-1.67 ft	22.65 ft	0.67/100 ft	22.71 ft	355.78
3600.00 ft	1.24	33.03	100.00 ft	3599.26 ft	24.70 ft	-0.65 ft	24.70 ft	0.33/100 ft	24.71 ft	358.50



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Measured Depth	Inclin	Azimuth	Course Length	True Vertical Depth	N[+]/S[-]	E[+]/W[-]	Vertical Section	Dogleg Severity	Closure Distance	Closure Direction
3700.00 ft	1.96	64.97	100.00 ft	3699.22 ft	26.32 ft	1.49 ft	26.32 ft	1.12/100 ft	26.37 ft	3.24
3800.00 ft	1.89	60.96	100.00 ft	3799.16 ft	27.85 ft	4.48 ft	27.85 ft	0.15/100 ft	28.21 ft	9.14
3900.00 ft	1.29	61.82	100.00 ft	3899.12 ft	29.18 ft	6.92 ft	29.18 ft	0.60/100 ft	29.99 ft	13.34
4000.00 ft	0.86	56.09	100.00 ft	3999.11 ft	30.14 ft	8.54 ft	30.14 ft	0.45/100 ft	31.32 ft	15.82
4100.00 ft	0.15	310.69	100.00 ft	4099.10 ft	30.64 ft	9.07 ft	30.64 ft	0.91/100 ft	31.95 ft	16.49
4200.00 ft	1.46	302.22	100.00 ft	4199.09 ft	31.40 ft	7.89 ft	31.40 ft	1.32/100 ft	32.38 ft	14.10
4300.00 ft	1.77	304.50	100.00 ft	4299.05 ft	32.96 ft	5.54 ft	32.96 ft	0.31/100 ft	33.42 ft	9.54
4400.00 ft	2.05	281.17	100.00 ft	4399.00 ft	34.18 ft	2.51 ft	34.18 ft	0.82/100 ft	34.27 ft	4.20
4500.00 ft	1.37	285.00	100.00 ft	4498.95 ft	34.83 ft	-0.40 ft	34.83 ft	0.69/100 ft	34.84 ft	359.34
4600.00 ft	2.51	258.73	100.00 ft	4598.89 ft	34.72 ft	-3.71 ft	34.72 ft	1.41/100 ft	34.91 ft	353.90
4700.00 ft	1.66	235.25	100.00 ft	4698.83 ft	33.46 ft	-7.04 ft	33.46 ft	1.19/100 ft	34.20 ft	348.11
4800.00 ft	1.96	263.89	100.00 ft	4798.78 ft	32.46 ft	-9.93 ft	32.46 ft	0.94/100 ft	33.94 ft	342.98
4900.00 ft	2.04	259.90	100.00 ft	4898.72 ft	31.96 ft	-13.38 ft	31.96 ft	0.16/100 ft	34.65 ft	337.28
5000.00 ft	2.60	257.88	100.00 ft	4998.64 ft	31.17 ft	-17.35 ft	31.17 ft	0.56/100 ft	35.68 ft	330.90
5100.00 ft	2.46	254.62	100.00 ft	5098.54 ft	30.13 ft	-21.64 ft	30.13 ft	0.20/100 ft	37.10 ft	324.31
5200.00 ft	2.21	247.74	100.00 ft	5198.46 ft	28.83 ft	-25.50 ft	28.83 ft	0.38/100 ft	38.49 ft	318.51
5300.00 ft	1.69	228.00	100.00 ft	5298.40 ft	27.11 ft	-28.37 ft	27.11 ft	0.84/100 ft	39.25 ft	313.70
5400.00 ft	1.21	255.61	100.00 ft	5398.37 ft	25.86 ft	-30.49 ft	25.86 ft	0.84/100 ft	39.98 ft	310.31
5500.00 ft	0.23	203.64	100.00 ft	5498.36 ft	25.42 ft	-31.59 ft	25.42 ft	1.08/100 ft	40.55 ft	308.83
5600.00 ft	0.60	200.30	100.00 ft	5598.36 ft	24.75 ft	-31.85 ft	24.75 ft	0.37/100 ft	40.33 ft	307.85
5700.00 ft	1.05	193.66	100.00 ft	5698.35 ft	23.37 ft	-32.24 ft	23.37 ft	0.47/100 ft	39.82 ft	305.93