

BONANZA CREEK ENERGY OPERATING

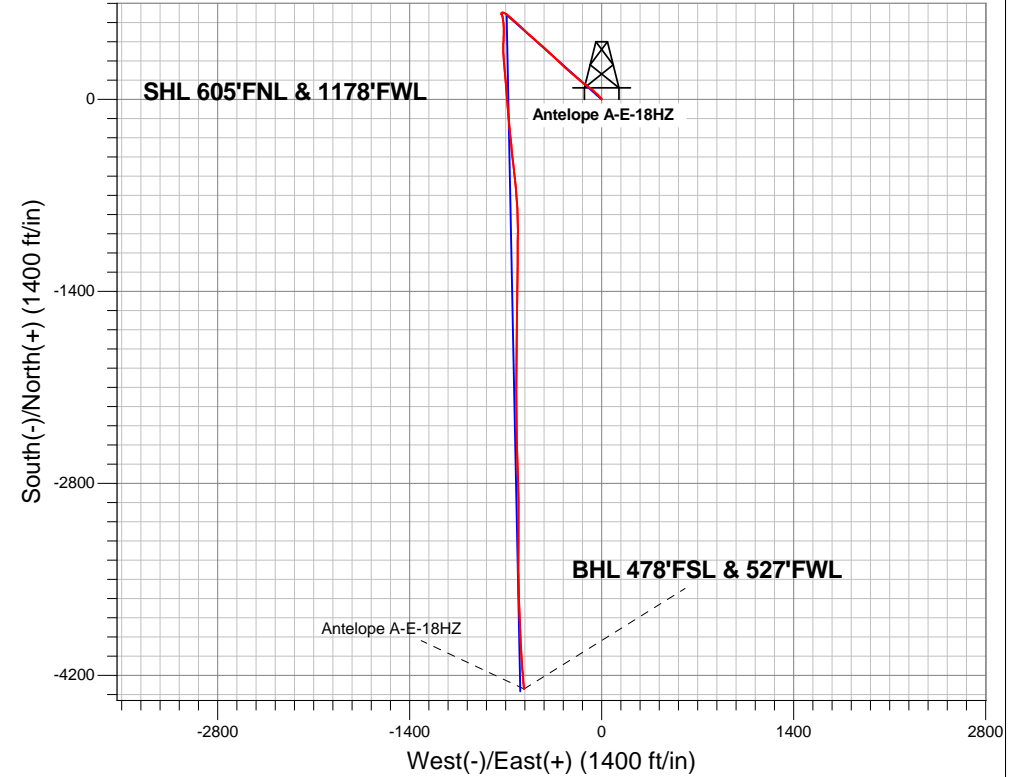
Well Name: Antelope A-E-18HZ

Surface Location: Antelope F-18 Pad Sec.18-T5N-R62W
North American Datum 1983 , US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4614.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1392375.50	3314359.26	40.404980	-104.371170	
		Original Well Elev WELL @ 4626.0ft (Original Well Elev)				

FINAL SURVEY

Projected Bottom Hole Location
11128'MD 6348'TVD 4299'S & 566'W of SHL
91.70 degree Incl @ 174.90 degree AZM



ENSIGN
Directional

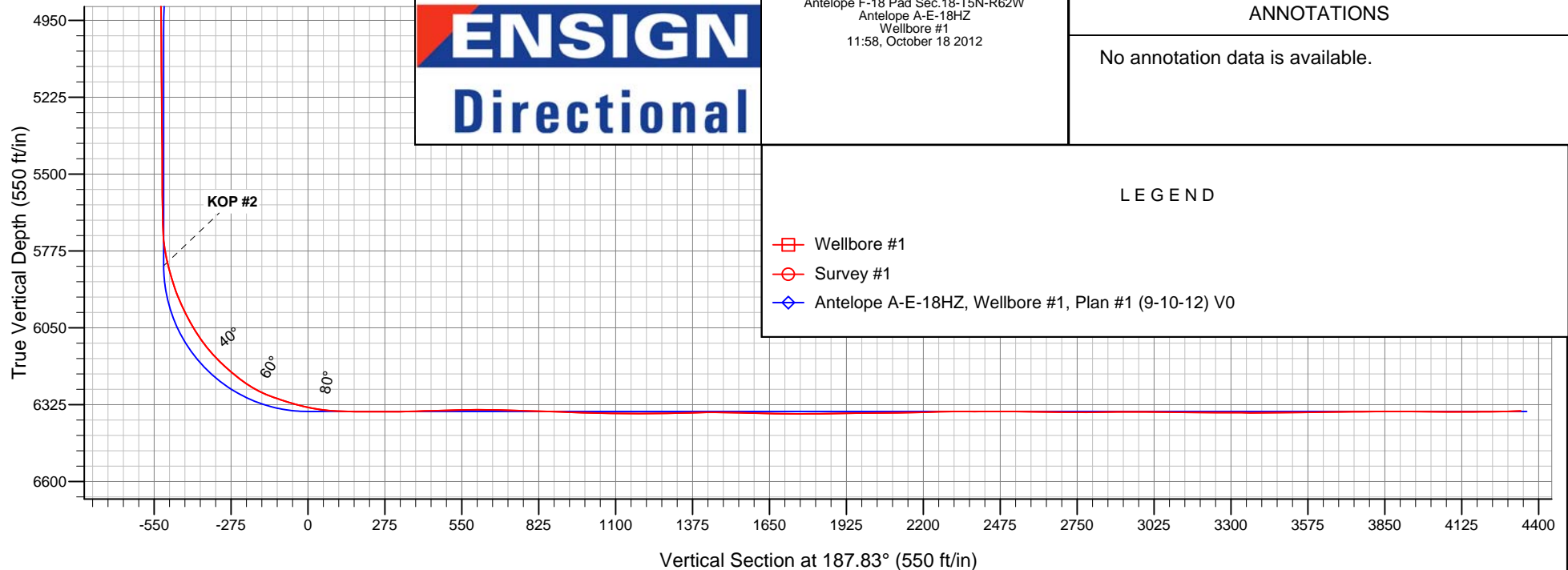
Antelope F-18 Pad Sec.18-T5N-R62W
Antelope A-E-18HZ
Wellbore #1
11:58, October 18 2012

ANNOTATIONS

No annotation data is available.

LEGEND

- Wellbore #1
- Survey #1
- Antelope A-E-18HZ, Wellbore #1, Plan #1 (9-10-12) V0





Directional

BONANZA CREEK ENERGY OPERATING

SEC.18-T5N-R62W

Antelope F-18 Pad Sec.18-T5N-R62W

Antelope A-E-18HZ

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 October, 2012

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope A-E-18HZ
Project:	SEC.18-T5N-R62W	TVD Reference:	WELL @ 4626.0ft (Original Well Elev)
Site:	Antelope F-18 Pad Sec.18-T5N-R62W	MD Reference:	WELL @ 4626.0ft (Original Well Elev)
Well:	Antelope A-E-18HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,251.0	9.20	315.30	1,248.7	34.1	-29.8	-29.7	1.77	1.72	-2.80
1,343.0	10.80	311.70	1,339.3	45.1	-41.4	-39.0	1.87	1.74	-3.91
1,435.0	13.00	313.50	1,429.4	57.9	-55.3	-49.9	2.42	2.39	1.96
1,528.0	14.50	308.20	1,519.7	72.3	-72.0	-61.9	2.10	1.61	-5.70
1,619.0	14.80	305.20	1,607.7	86.1	-90.5	-73.0	0.90	0.33	-3.30
1,710.0	15.10	308.40	1,695.7	100.1	-109.3	-84.3	0.97	0.33	3.52
1,803.0	15.30	306.60	1,785.4	115.0	-128.6	-96.4	0.55	0.22	-1.94
1,895.0	15.20	308.10	1,874.2	129.7	-147.9	-108.3	0.44	-0.11	1.63
1,987.0	15.20	309.80	1,963.0	144.8	-166.6	-120.8	0.48	0.00	1.85
2,080.0	16.00	311.00	2,052.5	161.0	-185.7	-134.3	0.93	0.86	1.29
2,173.0	15.40	310.20	2,142.1	177.4	-204.8	-147.9	0.69	-0.65	-0.86
2,266.0	15.00	310.70	2,231.8	193.2	-223.3	-161.0	0.45	-0.43	0.54
2,360.0	15.50	313.50	2,322.5	209.8	-241.7	-175.0	0.95	0.53	2.98
2,452.0	15.90	313.30	2,411.1	226.9	-259.7	-189.4	0.44	0.43	-0.22
2,545.0	15.70	312.80	2,500.6	244.2	-278.2	-204.0	0.26	-0.22	-0.54
2,638.0	15.80	312.30	2,590.1	261.3	-296.8	-218.4	0.18	0.11	-0.54
2,730.0	16.50	312.80	2,678.4	278.6	-315.7	-233.0	0.78	0.76	0.54
2,824.0	17.10	312.80	2,768.4	297.0	-335.6	-248.6	0.64	0.64	0.00
2,918.0	16.50	313.00	2,858.4	315.5	-355.5	-264.2	0.64	-0.64	0.21
3,012.0	16.40	313.30	2,948.6	333.7	-375.0	-279.6	0.14	-0.11	0.32
3,105.0	16.00	314.40	3,037.9	351.7	-393.7	-294.8	0.54	-0.43	1.18
3,199.0	15.40	313.30	3,128.4	369.3	-412.0	-309.8	0.71	-0.64	-1.17
3,292.0	16.00	310.30	3,217.9	386.1	-430.8	-323.8	1.09	0.65	-3.23
3,386.0	16.40	310.00	3,308.2	403.0	-450.8	-337.9	0.43	0.43	-0.32
3,479.0	17.40	311.90	3,397.1	420.7	-471.2	-352.7	1.23	1.08	2.04
3,573.0	18.80	311.90	3,486.5	440.2	-493.0	-369.0	1.49	1.49	0.00
3,665.0	20.80	311.60	3,573.0	461.0	-516.2	-386.4	2.18	2.17	-0.33
3,759.0	22.20	311.60	3,660.5	483.9	-542.0	-405.6	1.49	1.49	0.00
3,853.0	22.40	311.90	3,747.5	507.6	-568.6	-425.5	0.24	0.21	0.32
3,946.0	21.60	313.30	3,833.7	531.2	-594.2	-445.3	1.03	-0.86	1.51
4,038.0	19.70	313.90	3,919.8	553.5	-617.7	-464.3	2.08	-2.07	0.65
4,133.0	17.00	311.60	4,009.9	573.9	-639.7	-481.4	2.94	-2.84	-2.42
4,225.0	14.20	309.80	4,098.5	590.0	-658.4	-494.9	3.09	-3.04	-1.96
4,319.0	12.40	312.30	4,190.0	604.2	-674.7	-506.7	2.01	-1.91	2.66
4,412.0	10.40	309.80	4,281.2	616.3	-688.5	-516.8	2.21	-2.15	-2.69
4,506.0	7.70	303.00	4,374.0	625.2	-700.3	-524.0	3.08	-2.87	-7.23
4,599.0	5.70	294.70	4,466.4	630.5	-709.8	-528.0	2.38	-2.15	-8.92
4,693.0	3.90	279.20	4,560.0	632.9	-717.2	-529.4	2.34	-1.91	-16.49
4,786.0	2.60	263.40	4,652.9	633.2	-722.4	-529.0	1.68	-1.40	-16.99
4,879.0	1.80	249.30	4,745.8	632.4	-725.8	-527.7	1.03	-0.86	-15.16
4,973.0	0.90	211.00	4,839.8	631.3	-727.6	-526.3	1.31	-0.96	-40.74
5,066.0	0.80	223.10	4,932.8	630.2	-728.4	-525.1	0.22	-0.11	13.01
5,160.0	1.00	251.10	5,026.8	629.4	-729.7	-524.2	0.51	0.21	29.79
5,254.0	0.40	224.20	5,120.8	628.9	-730.7	-523.6	0.71	-0.64	-28.62
5,348.0	0.40	182.00	5,214.8	628.4	-730.9	-523.0	0.31	0.00	-44.89
5,441.0	0.50	204.90	5,307.8	627.7	-731.1	-522.3	0.22	0.11	24.62
5,535.0	0.50	166.50	5,401.8	626.9	-731.2	-521.5	0.35	0.00	-40.85
5,629.0	0.50	180.80	5,495.8	626.1	-731.1	-520.7	0.13	0.00	15.21
5,723.0	0.60	196.40	5,589.8	625.2	-731.2	-519.9	0.19	0.11	16.60
5,784.0	0.70	169.90	5,650.7	624.6	-731.2	-519.2	0.51	0.16	-43.44
5,811.0	0.90	191.00	5,677.7	624.2	-731.2	-518.8	1.31	0.74	78.15
5,842.0	2.80	159.50	5,708.7	623.2	-731.0	-517.9	6.73	6.13	-101.61
5,873.0	7.20	152.30	5,739.6	620.8	-729.9	-515.7	14.31	14.19	-23.23
5,904.0	11.10	155.10	5,770.2	616.4	-727.7	-511.6	12.66	12.58	9.03

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Site:	Antelope F-18 Pad Sec.18-T5N-R62W	MD Reference:	WELL @ 4626.0ft (Original Well Elev)
Well:	Antelope A-E-18HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,935.0	13.80	156.50	5,800.5	610.3	-725.0	-505.9	8.76	8.71	4.52
5,966.0	15.10	167.10	5,830.5	603.0	-722.6	-499.0	9.49	4.19	34.19
5,997.0	17.10	169.90	5,860.3	594.5	-720.9	-490.8	6.92	6.45	9.03
6,029.0	18.00	172.00	5,890.8	585.0	-719.4	-481.6	3.44	2.81	6.56
6,060.0	20.40	173.40	5,920.1	574.9	-718.1	-471.8	7.88	7.74	4.52
6,091.0	23.10	174.60	5,948.9	563.5	-716.9	-460.6	8.83	8.71	3.87
6,123.0	26.00	174.60	5,978.0	550.2	-715.6	-447.7	9.06	9.06	0.00
6,154.0	27.80	176.70	6,005.6	536.2	-714.6	-434.0	6.56	5.81	6.77
6,185.0	30.00	179.00	6,032.7	521.3	-714.0	-419.2	7.95	7.10	7.42
6,216.0	31.40	178.90	6,059.4	505.5	-713.7	-403.6	4.52	4.52	-0.32
6,248.0	34.60	181.10	6,086.2	488.0	-713.8	-386.3	10.68	10.00	6.88
6,279.0	37.30	182.40	6,111.3	469.8	-714.3	-368.2	9.05	8.71	4.19
6,309.0	41.00	182.00	6,134.6	450.9	-715.0	-349.4	12.36	12.33	-1.33
6,341.0	44.20	181.30	6,158.1	429.3	-715.7	-327.8	10.11	10.00	-2.19
6,371.0	47.00	181.10	6,179.1	407.8	-716.1	-306.5	9.35	9.33	-0.67
6,403.0	49.00	180.30	6,200.5	384.1	-716.4	-282.9	6.52	6.25	-2.50
6,434.0	51.30	179.90	6,220.4	360.3	-716.4	-259.4	7.49	7.42	-1.29
6,465.0	53.80	178.50	6,239.2	335.7	-716.1	-235.0	8.83	8.06	-4.52
6,496.0	57.90	176.70	6,256.6	310.0	-715.0	-209.8	14.07	13.23	-5.81
6,528.0	62.60	175.20	6,272.5	282.3	-713.0	-182.6	15.24	14.69	-4.69
6,559.0	67.00	175.00	6,285.7	254.4	-710.6	-155.3	14.21	14.19	-0.65
6,591.0	70.20	175.00	6,297.4	224.7	-708.0	-126.2	10.00	10.00	0.00
6,622.0	72.40	174.60	6,307.3	195.5	-705.4	-97.6	7.20	7.10	-1.29
6,653.0	73.20	175.20	6,316.5	166.0	-702.8	-68.8	3.17	2.58	1.94
6,682.8	75.34	175.48	6,324.6	137.4	-700.4	-40.8	7.24	7.19	0.94
T1 460°FNL, 500°FWL									
6,685.0	75.50	175.50	6,325.1	135.3	-700.3	-38.7	7.24	7.19	0.93
6,716.0	77.80	175.50	6,332.3	105.2	-697.9	-9.2	7.42	7.42	0.00
6,747.0	79.90	175.50	6,338.3	74.9	-695.5	20.5	6.77	6.77	0.00
6,779.0	82.30	175.30	6,343.2	43.4	-693.0	51.4	7.53	7.50	-0.63
6,810.0	85.60	175.20	6,346.5	12.7	-690.4	81.5	10.65	10.65	-0.32
6,841.0	88.10	175.00	6,348.2	-18.2	-687.8	111.7	8.09	8.06	-0.65
6,873.0	88.50	175.70	6,349.2	-50.1	-685.2	142.9	2.52	1.25	2.19
6,904.0	89.50	175.30	6,349.7	-81.0	-682.7	173.2	3.47	3.23	-1.29
6,935.0	89.90	175.20	6,349.9	-111.9	-680.2	203.4	1.33	1.29	-0.32
6,967.0	89.40	175.20	6,350.1	-143.7	-677.5	234.6	1.56	-1.56	0.00
6,975.0	89.40	175.20	6,350.1	-151.7	-676.8	242.5	0.00	0.00	0.00
7,062.0	91.00	173.90	6,349.8	-238.3	-668.6	327.1	2.37	1.84	-1.49
7,093.0	91.70	173.70	6,349.1	-269.1	-665.2	357.2	2.35	2.26	-0.65
7,123.0	91.40	174.60	6,348.3	-299.0	-662.2	386.3	3.16	-1.00	3.00
7,154.0	91.30	174.80	6,347.6	-329.8	-659.3	416.5	0.72	-0.32	0.65
7,185.0	91.60	174.20	6,346.8	-360.7	-656.3	446.7	2.16	0.97	-1.94
7,216.0	91.60	174.40	6,345.9	-391.5	-653.3	476.8	0.64	0.00	0.65
7,248.0	91.40	173.50	6,345.1	-423.3	-649.9	507.8	2.88	-0.63	-2.81
7,279.0	91.60	174.10	6,344.3	-454.1	-646.5	537.9	2.04	0.65	1.94
7,310.0	91.50	173.50	6,343.4	-484.9	-643.2	568.0	1.96	-0.32	-1.94
7,342.0	90.30	173.40	6,342.9	-516.7	-639.5	599.0	3.76	-3.75	-0.31
7,373.0	89.20	173.90	6,343.1	-547.5	-636.1	629.0	3.90	-3.55	1.61
7,404.0	89.30	173.50	6,343.5	-578.3	-632.7	659.1	1.33	0.32	-1.29
7,435.0	88.80	173.50	6,344.0	-609.1	-629.2	689.1	1.61	-1.61	0.00
7,467.0	88.20	174.40	6,344.8	-640.9	-625.8	720.2	3.38	-1.88	2.81
7,498.0	87.50	174.60	6,346.0	-671.8	-622.9	750.3	2.35	-2.26	0.65
7,529.0	88.10	174.80	6,347.2	-702.6	-620.0	780.5	2.04	1.94	0.65
7,561.0	88.90	176.40	6,348.0	-734.5	-617.5	811.7	5.59	2.50	5.00

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Site:	Antelope F-18 Pad Sec.18-T5N-R62W	MD Reference:	WELL @ 4626.0ft (Original Well Elev)
Well:	Antelope A-E-18HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,591.0	88.80	176.70	6,348.6	-764.4	-615.7	841.2	1.05	-0.33	1.00
7,623.0	88.20	177.20	6,349.4	-796.4	-614.0	872.6	2.44	-1.88	1.56
7,653.0	87.60	177.40	6,350.5	-826.3	-612.6	902.1	2.11	-2.00	0.67
7,683.0	87.60	179.00	6,351.8	-856.3	-611.7	931.6	5.33	0.00	5.33
7,715.0	87.80	179.30	6,353.1	-888.3	-611.2	963.2	1.13	0.63	0.94
7,745.0	88.10	179.90	6,354.2	-918.2	-611.0	992.9	2.23	1.00	2.00
7,777.0	88.50	180.70	6,355.1	-950.2	-611.2	1,024.6	2.79	1.25	2.50
7,809.0	88.90	180.60	6,355.8	-982.2	-611.5	1,056.3	1.29	1.25	-0.31
7,840.0	89.50	180.20	6,356.3	-1,013.2	-611.7	1,087.1	2.33	1.94	-1.29
7,871.0	90.30	179.90	6,356.3	-1,044.2	-611.8	1,117.8	2.76	2.58	-0.97
7,902.0	89.80	179.70	6,356.3	-1,075.2	-611.7	1,148.5	1.74	-1.61	-0.65
7,933.0	90.00	179.50	6,356.3	-1,106.2	-611.5	1,179.2	0.91	0.65	-0.65
7,964.0	89.60	179.90	6,356.5	-1,137.2	-611.3	1,209.9	1.82	-1.29	1.29
7,995.0	90.30	180.20	6,356.5	-1,168.2	-611.3	1,240.6	2.46	2.26	0.97
8,026.0	90.80	180.00	6,356.2	-1,199.2	-611.4	1,271.3	1.74	1.61	-0.65
8,057.0	91.60	179.90	6,355.5	-1,230.2	-611.3	1,302.0	2.60	2.58	-0.32
8,088.0	91.30	180.00	6,354.7	-1,261.2	-611.3	1,332.7	1.02	-0.97	0.32
8,120.0	91.60	180.00	6,353.9	-1,293.2	-611.3	1,364.4	0.94	0.94	0.00
8,151.0	91.40	180.40	6,353.1	-1,324.2	-611.4	1,395.1	1.44	-0.65	1.29
8,182.0	90.80	181.10	6,352.5	-1,355.2	-611.8	1,425.8	2.97	-1.94	2.26
8,214.0	89.90	181.80	6,352.3	-1,387.2	-612.6	1,457.6	3.56	-2.81	2.19
8,245.0	88.70	181.80	6,352.7	-1,418.1	-613.6	1,488.5	3.87	-3.87	0.00
8,276.0	88.80	182.20	6,353.4	-1,449.1	-614.7	1,519.3	1.33	0.32	1.29
8,307.0	88.30	181.60	6,354.2	-1,480.1	-615.7	1,550.1	2.52	-1.61	-1.94
8,339.0	88.50	181.30	6,355.1	-1,512.1	-616.5	1,581.9	1.13	0.63	-0.94
8,370.0	89.10	180.90	6,355.7	-1,543.0	-617.1	1,612.7	2.33	1.94	-1.29
8,401.0	89.40	180.70	6,356.1	-1,574.0	-617.6	1,643.5	1.16	0.97	-0.65
8,433.0	88.80	180.40	6,356.6	-1,606.0	-617.9	1,675.2	2.10	-1.88	-0.94
8,464.0	89.10	180.60	6,357.2	-1,637.0	-618.1	1,705.9	1.16	0.97	0.65
8,494.0	89.50	180.60	6,357.6	-1,667.0	-618.5	1,735.7	1.33	1.33	0.00
8,526.0	90.20	180.90	6,357.6	-1,699.0	-618.9	1,767.5	2.38	2.19	0.94
8,555.0	90.90	180.70	6,357.4	-1,728.0	-619.3	1,796.2	2.51	2.41	-0.69
8,587.0	90.50	180.70	6,357.0	-1,760.0	-619.7	1,828.0	1.25	-1.25	0.00
8,618.0	90.90	179.90	6,356.6	-1,791.0	-619.8	1,858.7	2.89	1.29	-2.58
8,650.0	90.60	180.40	6,356.2	-1,823.0	-619.9	1,890.4	1.82	-0.94	1.56
8,681.0	91.20	180.70	6,355.7	-1,854.0	-620.2	1,921.2	2.16	1.94	0.97
8,712.0	90.70	180.40	6,355.2	-1,885.0	-620.5	1,951.9	1.88	-1.61	-0.97
8,742.0	90.00	181.10	6,355.0	-1,915.0	-620.9	1,981.7	3.30	-2.33	2.33
8,773.0	90.40	180.90	6,354.9	-1,946.0	-621.4	2,012.5	1.44	1.29	-0.65
8,804.0	91.00	181.40	6,354.5	-1,977.0	-622.1	2,043.3	2.52	1.94	1.61
8,836.0	90.60	181.30	6,354.1	-2,009.0	-622.8	2,075.1	1.29	-1.25	-0.31
8,867.0	90.60	180.70	6,353.7	-2,040.0	-623.4	2,105.8	1.94	0.00	-1.94
8,899.0	90.90	180.20	6,353.3	-2,072.0	-623.6	2,137.6	1.82	0.94	-1.56
8,930.0	91.40	179.70	6,352.7	-2,102.9	-623.6	2,168.3	2.28	1.61	-1.61
8,961.0	91.50	179.20	6,351.9	-2,133.9	-623.3	2,198.9	1.64	0.32	-1.61
8,992.0	91.70	179.30	6,351.0	-2,164.9	-622.9	2,229.6	0.72	0.65	0.32
9,022.0	91.70	178.30	6,350.2	-2,194.9	-622.3	2,259.2	3.33	0.00	-3.33
9,054.0	91.00	178.10	6,349.4	-2,226.9	-621.2	2,290.7	2.27	-2.19	-0.63
9,085.0	90.10	179.20	6,349.1	-2,257.9	-620.5	2,321.3	4.58	-2.90	3.55
9,116.0	89.60	179.70	6,349.2	-2,288.9	-620.2	2,352.0	2.28	-1.61	1.61
9,148.0	89.90	179.90	6,349.3	-2,320.9	-620.1	2,383.7	1.13	0.94	0.63
9,179.0	90.70	179.90	6,349.2	-2,351.9	-620.1	2,414.4	2.58	2.58	0.00
9,211.0	90.40	179.20	6,348.9	-2,383.9	-619.8	2,446.0	2.38	-0.94	-2.19
9,242.0	89.60	177.90	6,348.9	-2,414.8	-619.0	2,476.6	4.92	-2.58	-4.19

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope A-E-18HZ
Project:	SEC.18-T5N-R62W	TVD Reference:	WELL @ 4626.0ft (Original Well Elev)
Site:	Antelope F-18 Pad Sec.18-T5N-R62W	MD Reference:	WELL @ 4626.0ft (Original Well Elev)
Well:	Antelope A-E-18HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,274.0	89.30	178.80	6,349.2	-2,446.8	-618.1	2,508.2	2.96	-0.94	2.81	
9,305.0	89.40	178.80	6,349.5	-2,477.8	-617.4	2,538.8	0.32	0.32	0.00	
9,336.0	88.90	178.80	6,350.0	-2,508.8	-616.8	2,569.4	1.61	-1.61	0.00	
9,368.0	89.20	179.20	6,350.5	-2,540.8	-616.2	2,601.0	1.56	0.94	1.25	
9,398.0	89.80	178.50	6,350.8	-2,570.8	-615.6	2,630.7	3.07	2.00	-2.33	
9,429.0	89.40	178.10	6,351.0	-2,601.8	-614.7	2,661.3	1.82	-1.29	-1.29	
9,460.0	89.30	177.90	6,351.3	-2,632.8	-613.6	2,691.8	0.72	-0.32	-0.65	
9,491.0	89.10	178.50	6,351.8	-2,663.7	-612.7	2,722.4	2.04	-0.65	1.94	
9,523.0	89.50	178.80	6,352.2	-2,695.7	-611.9	2,753.9	1.56	1.25	0.94	
9,552.0	90.70	178.60	6,352.1	-2,724.7	-611.3	2,782.6	4.20	4.14	-0.69	
9,584.0	90.70	178.50	6,351.7	-2,756.7	-610.4	2,814.2	0.31	0.00	-0.31	
9,615.0	90.50	178.30	6,351.4	-2,787.7	-609.6	2,844.7	0.91	-0.65	-0.65	
9,646.0	90.20	178.50	6,351.2	-2,818.7	-608.7	2,875.3	1.16	-0.97	0.65	
9,677.0	91.00	179.00	6,350.9	-2,849.7	-608.0	2,905.9	3.04	2.58	1.61	
9,707.0	90.30	178.80	6,350.5	-2,879.7	-607.5	2,935.6	2.43	-2.33	-0.67	
9,737.0	89.40	178.80	6,350.6	-2,909.7	-606.8	2,965.2	3.00	-3.00	0.00	
9,768.0	89.90	178.80	6,350.8	-2,940.7	-606.2	2,995.8	1.61	1.61	0.00	
9,800.0	89.70	178.50	6,350.9	-2,972.6	-605.4	3,027.4	1.13	-0.63	-0.94	
9,831.0	89.30	179.70	6,351.2	-3,003.6	-604.9	3,058.0	4.08	-1.29	3.87	
9,862.0	89.60	179.90	6,351.5	-3,034.6	-604.8	3,088.7	1.16	0.97	0.65	
9,893.0	89.20	180.60	6,351.8	-3,065.6	-605.0	3,119.5	2.60	-1.29	2.26	
9,925.0	89.30	180.20	6,352.2	-3,097.6	-605.2	3,151.2	1.29	0.31	-1.25	
9,956.0	88.90	180.20	6,352.7	-3,128.6	-605.3	3,181.9	1.29	-1.29	0.00	
9,987.0	89.30	180.40	6,353.2	-3,159.6	-605.5	3,212.6	1.44	1.29	0.65	
10,019.0	89.80	180.40	6,353.5	-3,191.6	-605.7	3,244.4	1.56	1.56	0.00	
10,050.0	90.20	180.60	6,353.5	-3,222.6	-606.0	3,275.1	1.44	1.29	0.65	
10,081.0	90.00	181.40	6,353.4	-3,253.6	-606.5	3,305.9	2.66	-0.65	2.58	
10,112.0	89.30	180.90	6,353.6	-3,284.6	-607.1	3,336.7	2.77	-2.26	-1.61	
10,144.0	89.30	180.20	6,354.0	-3,316.6	-607.4	3,368.4	2.19	0.00	-2.19	
10,175.0	89.80	179.90	6,354.2	-3,347.6	-607.5	3,399.1	1.88	1.61	-0.97	
10,206.0	90.70	179.50	6,354.1	-3,378.6	-607.3	3,429.8	3.18	2.90	-1.29	
10,237.0	91.00	179.50	6,353.6	-3,409.6	-607.0	3,460.5	0.97	0.97	0.00	
10,267.0	90.70	179.50	6,353.2	-3,439.6	-606.8	3,490.2	1.00	-1.00	0.00	
10,298.0	90.90	179.30	6,352.7	-3,470.6	-606.4	3,520.8	0.91	0.65	-0.65	
10,329.0	90.60	179.00	6,352.3	-3,501.6	-606.0	3,551.5	1.37	-0.97	-0.97	
10,361.0	90.90	178.50	6,351.9	-3,533.6	-605.3	3,583.1	1.82	0.94	-1.56	
10,392.0	90.60	178.60	6,351.5	-3,564.6	-604.5	3,613.7	1.02	-0.97	0.32	
10,423.0	90.80	178.50	6,351.1	-3,595.5	-603.7	3,644.3	0.72	0.65	-0.32	
10,455.0	90.40	178.80	6,350.8	-3,627.5	-603.0	3,675.8	1.56	-1.25	0.94	
10,486.0	90.60	178.80	6,350.5	-3,658.5	-602.3	3,706.5	0.65	0.65	0.00	
10,517.0	90.60	178.50	6,350.2	-3,689.5	-601.6	3,737.1	0.97	0.00	-0.97	
10,549.0	90.70	177.10	6,349.8	-3,721.5	-600.3	3,768.6	4.39	0.31	-4.38	
10,580.0	90.70	177.60	6,349.5	-3,752.5	-598.9	3,799.1	1.61	0.00	1.61	
10,611.0	91.00	178.10	6,349.0	-3,783.4	-597.7	3,829.6	1.88	0.97	1.61	
10,642.0	90.30	178.30	6,348.7	-3,814.4	-596.8	3,860.1	2.35	-2.26	0.65	
10,674.0	89.10	177.60	6,348.8	-3,846.4	-595.6	3,891.7	4.34	-3.75	-2.19	
10,704.0	89.20	177.10	6,349.3	-3,876.4	-594.2	3,921.2	1.70	0.33	-1.67	
10,735.0	89.30	177.20	6,349.7	-3,907.3	-592.7	3,951.6	0.46	0.32	0.32	
10,766.0	89.60	177.10	6,350.0	-3,938.3	-591.2	3,982.1	1.02	0.97	-0.32	
10,798.0	89.90	177.10	6,350.1	-3,970.2	-589.5	4,013.5	0.94	0.94	0.00	
10,828.0	89.50	176.70	6,350.3	-4,000.2	-587.9	4,043.0	1.89	-1.33	-1.33	
10,860.0	89.30	176.70	6,350.6	-4,032.1	-586.1	4,074.4	0.63	-0.63	0.00	
10,891.0	89.90	176.50	6,350.8	-4,063.1	-584.2	4,104.8	2.04	1.94	-0.65	
10,922.0	90.50	176.20	6,350.7	-4,094.0	-582.3	4,135.2	2.16	1.94	-0.97	

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope A-E-18HZ
Project:	SEC.18-T5N-R62W	TVD Reference:	WELL @ 4626.0ft (Original Well Elev)
Site:	Antelope F-18 Pad Sec.18-T5N-R62W	MD Reference:	WELL @ 4626.0ft (Original Well Elev)
Well:	Antelope A-E-18HZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,954.0	90.10	176.00	6,350.5	-4,125.9	-580.1	4,166.5	1.40	-1.25	-0.63	
10,985.0	90.70	175.60	6,350.3	-4,156.9	-577.8	4,196.8	2.33	1.94	-1.29	
11,016.0	90.50	175.50	6,350.0	-4,187.8	-575.4	4,227.1	0.72	-0.65	-0.32	
11,048.0	90.80	175.50	6,349.6	-4,219.7	-572.9	4,258.4	0.94	0.94	0.00	
11,078.0	91.70	174.90	6,349.0	-4,249.5	-570.4	4,287.6	3.61	3.00	-2.00	
11,128.0	91.70	174.90	6,347.5	-4,299.3	-566.0	4,336.3	0.00	0.00	0.00	
BHL 460°FSL, 500°FWL										

Wellbore Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
HARDLINE SHL 460°f	0.00	0.00	1.0	145.0	-800.0	1,392,510.30	3,313,557.51	40.405378	-104.374043	
- survey misses target center by 813.0ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)										
- Polygon										
Point 1			1.0	0.0	0.0	1,392,510.30	3,313,557.51			
Point 2			1.0	0.0	800.0	1,392,520.49	3,314,357.41			
HARDLINE BHL 460°f	0.00	0.00	1.0	-4,317.1	-993.3	1,388,046.29	3,313,421.04	40.393130	-104.374736	
- survey misses target center by 4429.9ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)										
- Polygon										
Point 1			1.0	0.0	0.0	1,388,046.29	3,313,421.04			
Point 2			1.0	0.0	800.0	1,388,056.47	3,314,220.94			
BHL 460°FSL, 500°FWL	0.00	0.00	6,349.0	-4,317.1	-593.3	1,388,051.40	3,313,820.97	40.393130	-104.373300	
- survey misses target center by 32.6ft at 11128.0ft MD (6347.5 TVD, -4299.3 N, -566.0 E)										
- Point										
T1 460°FNL, 500°FWL	0.00	0.00	6,349.0	145.7	-682.3	1,392,512.54	3,313,675.16	40.405380	-104.373620	
- survey misses target center by 31.5ft at 6682.8ft MD (6324.6 TVD, 137.4 N, -700.4 E)										
- Point										

Checked By: _____	Approved By: _____	Date: _____
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