

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Antelope 23-17
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	WELL @ 4652.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	WELL @ 4652.0ft (Original Well Elev)
Site:	Antelope I-17	North Reference:	Grid
Well:	Antelope 23-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	Weld County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Antelope I-17			
Site Position:		Northing:	1,389,136.37 ft	Latitude:	40.395890
From:	Lat/Long	Easting:	3,319,802.68 ft	Longitude:	-104.351800
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.74 °

Well	Antelope 23-17					
Well Position	+N/-S	0.0 ft	Northing:	1,389,118.15 ft	Latitude:	40.395840
	+E/-W	0.0 ft	Easting:	3,319,802.92 ft	Longitude:	-104.351800
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,642.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/20/2010	8.71	67.13	53,226

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	43.99	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,184.0	11.68	43.99	1,179.9	42.7	41.2	2.00	2.00	0.00	43.99	
5,309.5	11.68	43.99	5,220.1	643.6	621.2	0.00	0.00	0.00	0.00	
5,893.5	0.00	0.00	5,800.0	686.2	662.4	2.00	-2.00	0.00	180.00	Antelope 23-17 TGT
6,793.5	0.00	0.00	6,700.0	686.2	662.4	0.00	0.00	0.00	0.00	Antelope 23-17 PBHL

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Wellbore: DD
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Local Co-ordinate Reference: Well Antelope 23-17
TVD Reference: WELL @ 4652.0ft (Original Well Elev)
MD Reference: WELL @ 4652.0ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	KOP @ 600'
700.0	2.00	43.99	700.0	1.3	1.2	1.7	2.00	2.00	
800.0	4.00	43.99	799.8	5.0	4.8	7.0	2.00	2.00	
900.0	6.00	43.99	899.5	11.3	10.9	15.7	2.00	2.00	
1,000.0	8.00	43.99	998.7	20.1	19.4	27.9	2.00	2.00	
1,100.0	10.00	43.99	1,097.5	31.3	30.2	43.5	2.00	2.00	
1,184.0	11.68	43.99	1,179.9	42.7	41.2	59.3	2.00	2.00	EOB @ Inc. = 11.68°
1,200.0	11.68	43.99	1,195.6	45.0	43.4	62.6	0.00	0.00	
1,300.0	11.68	43.99	1,293.6	59.6	57.5	82.8	0.00	0.00	
1,400.0	11.68	43.99	1,391.5	74.1	71.6	103.0	0.00	0.00	
1,500.0	11.68	43.99	1,489.4	88.7	85.6	123.3	0.00	0.00	
1,600.0	11.68	43.99	1,587.4	103.3	99.7	143.5	0.00	0.00	
1,700.0	11.68	43.99	1,685.3	117.8	113.7	163.8	0.00	0.00	
1,800.0	11.68	43.99	1,783.2	132.4	127.8	184.0	0.00	0.00	
1,900.0	11.68	43.99	1,881.1	147.0	141.9	204.3	0.00	0.00	
2,000.0	11.68	43.99	1,979.1	161.5	155.9	224.5	0.00	0.00	
2,100.0	11.68	43.99	2,077.0	176.1	170.0	244.8	0.00	0.00	
2,200.0	11.68	43.99	2,174.9	190.7	184.0	265.0	0.00	0.00	
2,300.0	11.68	43.99	2,272.9	205.2	198.1	285.2	0.00	0.00	
2,400.0	11.68	43.99	2,370.8	219.8	212.2	305.5	0.00	0.00	
2,500.0	11.68	43.99	2,468.7	234.4	226.2	325.7	0.00	0.00	
2,600.0	11.68	43.99	2,566.6	248.9	240.3	346.0	0.00	0.00	
2,700.0	11.68	43.99	2,664.6	263.5	254.3	366.2	0.00	0.00	
2,800.0	11.68	43.99	2,762.5	278.1	268.4	386.5	0.00	0.00	
2,900.0	11.68	43.99	2,860.4	292.6	282.5	406.7	0.00	0.00	
3,000.0	11.68	43.99	2,958.4	307.2	296.5	426.9	0.00	0.00	
3,100.0	11.68	43.99	3,056.3	321.7	310.6	447.2	0.00	0.00	
3,200.0	11.68	43.99	3,154.2	336.3	324.6	467.4	0.00	0.00	
3,300.0	11.68	43.99	3,252.2	350.9	338.7	487.7	0.00	0.00	
3,400.0	11.68	43.99	3,350.1	365.4	352.7	507.9	0.00	0.00	
3,500.0	11.68	43.99	3,448.0	380.0	366.8	528.2	0.00	0.00	
3,600.0	11.68	43.99	3,545.9	394.6	380.9	548.4	0.00	0.00	
3,700.0	11.68	43.99	3,643.9	409.1	394.9	568.6	0.00	0.00	
3,800.0	11.68	43.99	3,741.8	423.7	409.0	588.9	0.00	0.00	
3,900.0	11.68	43.99	3,839.7	438.3	423.0	609.1	0.00	0.00	
4,000.0	11.68	43.99	3,937.7	452.8	437.1	629.4	0.00	0.00	
4,100.0	11.68	43.99	4,035.6	467.4	451.2	649.6	0.00	0.00	
4,200.0	11.68	43.99	4,133.5	482.0	465.2	669.9	0.00	0.00	
4,300.0	11.68	43.99	4,231.4	496.5	479.3	690.1	0.00	0.00	
4,400.0	11.68	43.99	4,329.4	511.1	493.3	710.4	0.00	0.00	
4,500.0	11.68	43.99	4,427.3	525.7	507.4	730.6	0.00	0.00	
4,600.0	11.68	43.99	4,525.2	540.2	521.5	750.8	0.00	0.00	
4,700.0	11.68	43.99	4,623.2	554.8	535.5	771.1	0.00	0.00	
4,800.0	11.68	43.99	4,721.1	569.4	549.6	791.3	0.00	0.00	
4,900.0	11.68	43.99	4,819.0	583.9	563.6	811.6	0.00	0.00	
5,000.0	11.68	43.99	4,917.0	598.5	577.7	831.8	0.00	0.00	

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Well:	Antelope 23-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,100.0	11.68	43.99	5,014.9	613.0	591.8	852.1	0.00	0.00	
5,200.0	11.68	43.99	5,112.8	627.6	605.8	872.3	0.00	0.00	
5,300.0	11.68	43.99	5,210.7	642.2	619.9	892.5	0.00	0.00	
5,309.5	11.68	43.99	5,220.1	643.6	621.2	894.5	0.00	0.00	Start Drop -2.00
5,400.0	9.87	43.99	5,308.9	655.7	633.0	911.4	2.00	-2.00	
5,500.0	7.87	43.99	5,407.7	666.8	643.7	926.8	2.00	-2.00	
5,600.0	5.87	43.99	5,507.0	675.4	652.0	938.8	2.00	-2.00	
5,700.0	3.87	43.99	5,606.7	681.5	657.9	947.3	2.00	-2.00	
5,800.0	1.87	43.99	5,706.5	685.1	661.3	952.3	2.00	-2.00	
5,893.5	0.00	0.00	5,800.0	686.2	662.4	953.8	2.00	-2.00	EOD @ Inc. = 0° - Antelope 23-17 TGT
5,900.0	0.00	0.00	5,806.5	686.2	662.4	953.8	0.00	0.00	
6,000.0	0.00	0.00	5,906.5	686.2	662.4	953.8	0.00	0.00	
6,100.0	0.00	0.00	6,006.5	686.2	662.4	953.8	0.00	0.00	
6,200.0	0.00	0.00	6,106.5	686.2	662.4	953.8	0.00	0.00	
6,300.0	0.00	0.00	6,206.5	686.2	662.4	953.8	0.00	0.00	
6,345.5	0.00	0.00	6,252.0	686.2	662.4	953.8	0.00	0.00	Niobrara
6,400.0	0.00	0.00	6,306.5	686.2	662.4	953.8	0.00	0.00	
6,500.0	0.00	0.00	6,406.5	686.2	662.4	953.8	0.00	0.00	
6,600.0	0.00	0.00	6,506.5	686.2	662.4	953.8	0.00	0.00	
6,700.0	0.00	0.00	6,606.5	686.2	662.4	953.8	0.00	0.00	
6,793.5	0.00	0.00	6,700.0	686.2	662.4	953.8	0.00	0.00	TD at 6793.5 - Antelope 23-17 PBHL

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Antelope 23-17 TGT - hit/miss target - Shape - Point	0.00	0.00	5,800.0	686.2	662.4	1,389,804.39	3,320,465.32	40.397700	-104.349390
Antelope 23-17 PBHL - plan hits target center - Circle (radius 50.0)	0.00	0.00	6,700.0	686.2	662.4	1,389,804.39	3,320,465.32	40.397700	-104.349390

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,345.5	6,252.0	Niobrara		0.00		

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Site:	Antelope I-17	North Reference:	Grid
Well:	Antelope 23-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
600.0	600.0	0.0	0.0	KOP @ 600'
1,184.0	1,179.9	42.7	41.2	EOB @ Inc. = 11.68°
5,309.5	5,220.1	643.6	621.2	Start Drop -2.00
5,893.5	5,800.0	686.2	662.4	EOD @ Inc. = 0°
6,793.5	6,700.0	686.2	662.4	TD at 6793.5