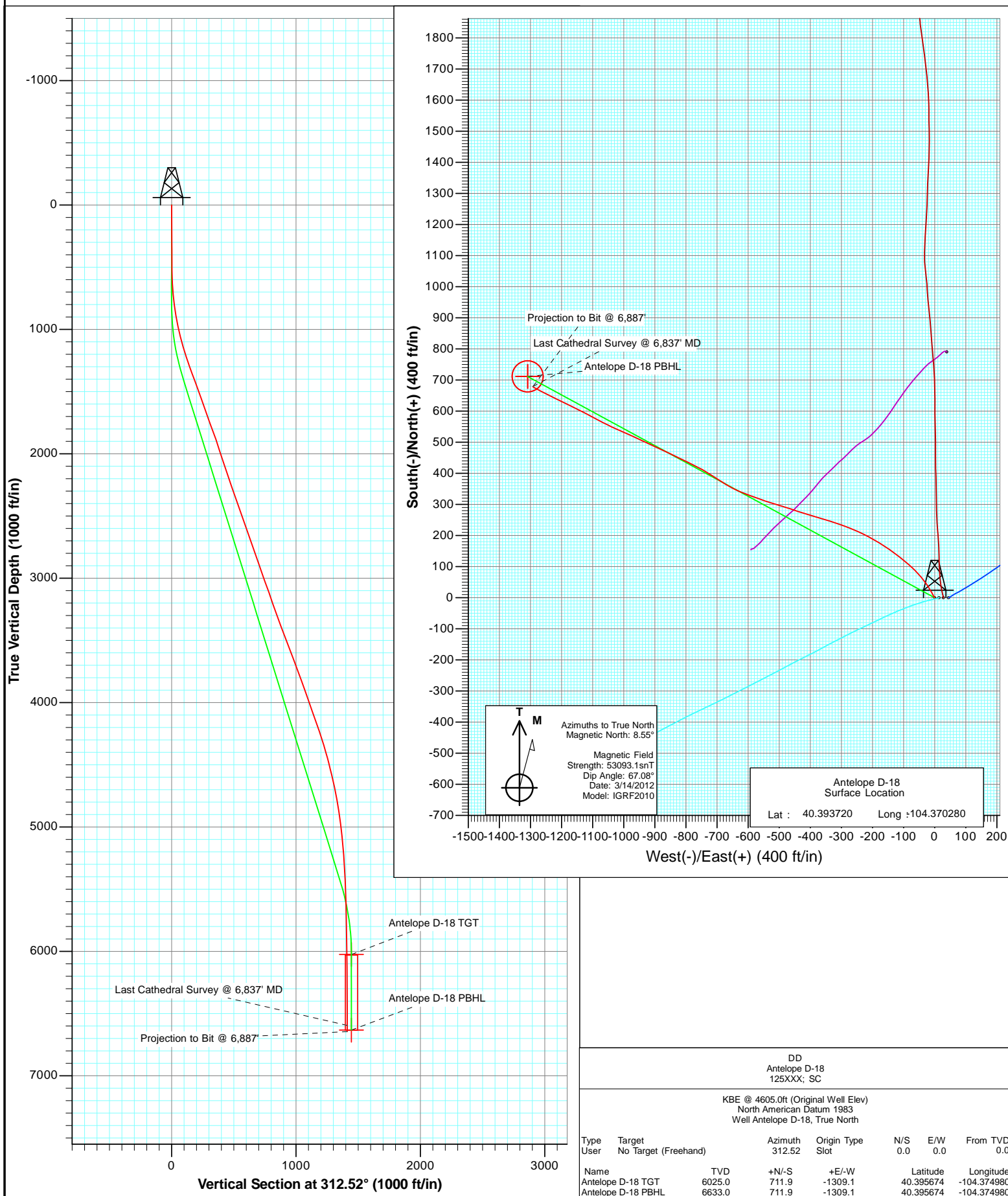


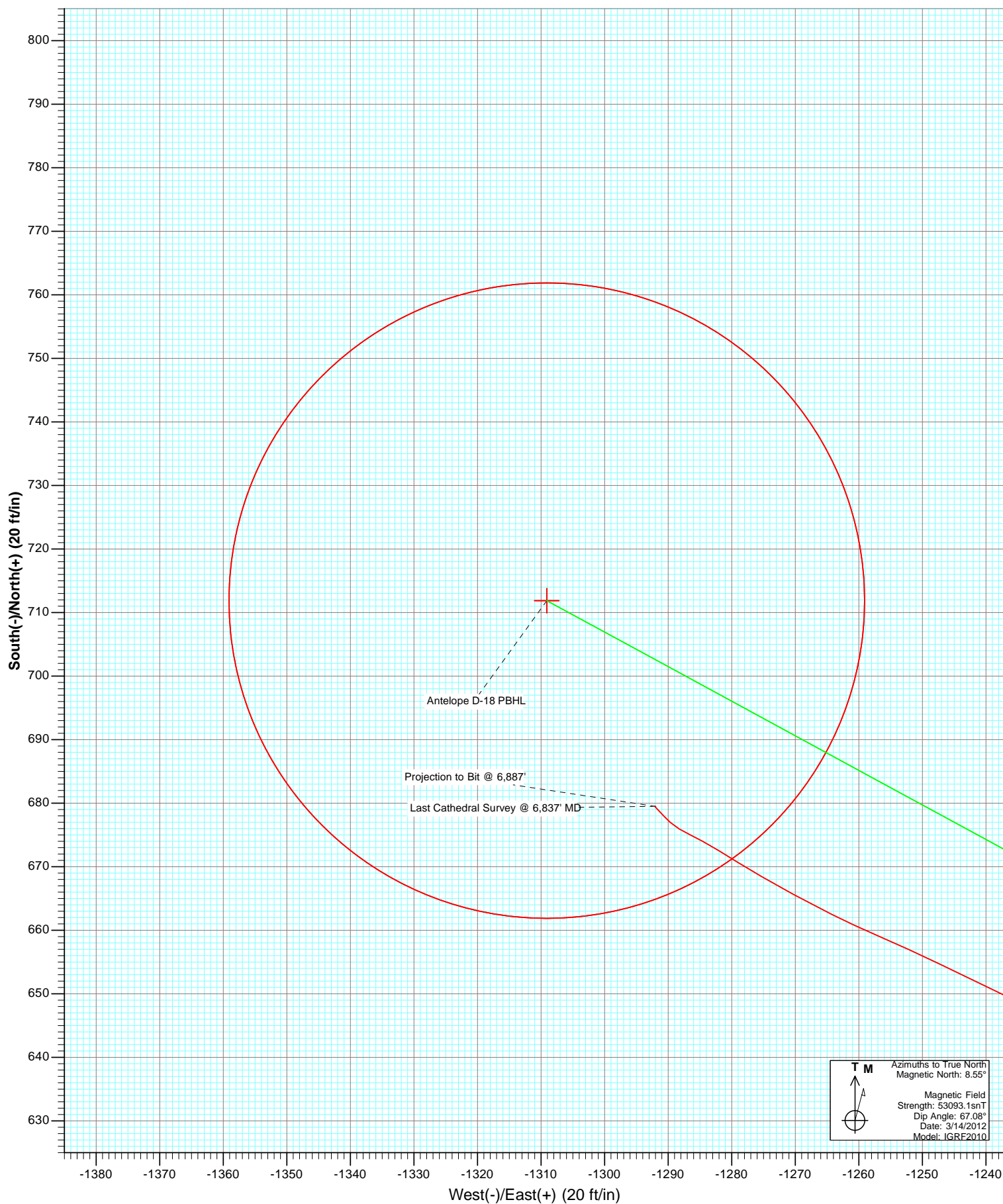


Project: Weld County  
 Site: Antelope D-18 Pad  
 Well: Antelope D-18  
 Wellbore: DD  
 Plan: FINAL





Project: Weld County  
Site: Antelope D-18 Pad  
Well: Antelope D-18  
Wellbore: DD  
Plan: DD



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope D-18
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4605.0ft (Original Well Elev)
<b>Site:</b>	Antelope D-18 Pad	<b>MD Reference:</b>	KBE @ 4605.0ft (Original Well Elev)
<b>Well:</b>	Antelope D-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

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

Site		Antelope D-18 Pad			
Site Position:		Northing:	1,388,280.15 ft	Latitude:	40.393721
From:	Lat/Long	Easting:	3,314,665.42 ft	Longitude:	-104.370282
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.73 °

Well	Antelope D-18					
Well Position	+N/-S	0.0 ft	Northing:	1,388,279.79 ft	Latitude:	40.393720
	+E/-W	0.0 ft	Easting:	3,314,665.98 ft	Longitude:	-104.370280
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,595.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	3/14/2012	8.55	67.08	53,093

<b>Design</b>	DD				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	312.52	

<b>Survey Program</b>	<b>Date</b>	7/24/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
526.0	6,887.0	Survey #1 (DD)	MWD	Geolink MWD	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
526.0	0.60	321.80	526.0	2.2	-1.7	2.7	0.11	0.11		
622.0	3.20	328.40	621.9	4.8	-3.4	5.8	2.71	2.71		
717.0	5.50	332.80	716.6	11.2	-6.9	12.6	2.44	2.42		
812.0	7.60	333.30	811.0	20.8	-11.8	22.8	2.21	2.21		
905.0	10.20	326.70	902.9	33.2	-19.1	36.5	3.00	2.80		
999.0	13.00	323.80	995.0	48.7	-29.9	54.9	3.04	2.98		
1,092.0	15.20	320.10	1,085.2	66.5	-43.9	77.3	2.56	2.37		
1,186.0	16.90	315.80	1,175.5	85.7	-61.3	103.1	2.21	1.81		
1,281.0	18.90	311.40	1,265.9	105.8	-82.5	132.3	2.54	2.11		
1,376.0	20.90	307.70	1,355.2	126.3	-107.5	164.6	2.49	2.11		
1,469.0	20.30	306.60	1,442.3	146.1	-133.5	197.2	0.77	-0.65		
1,564.0	19.20	304.50	1,531.7	164.8	-159.6	229.0	1.38	-1.16		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope D-18
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4605.0ft (Original Well Elev)
<b>Site:</b>	Antelope D-18 Pad	<b>MD Reference:</b>	KBE @ 4605.0ft (Original Well Elev)
<b>Well:</b>	Antelope D-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,659.0	19.80	299.30	1,621.3	181.5	-186.5	260.2	1.93	0.63	
1,753.0	21.20	298.60	1,709.3	197.4	-215.3	292.2	1.51	1.49	
1,848.0	21.10	293.60	1,797.9	212.5	-246.1	325.0	1.90	-0.11	
1,943.0	19.60	292.20	1,887.0	225.4	-276.5	356.1	1.66	-1.58	
2,037.0	19.60	288.40	1,975.5	236.3	-306.1	385.3	1.36	0.00	
2,131.0	20.30	287.20	2,063.9	246.1	-336.6	414.4	0.86	0.74	
2,226.0	20.40	287.00	2,153.0	255.8	-368.2	444.3	0.13	0.11	
2,320.0	20.90	286.70	2,240.9	265.4	-399.9	474.2	0.54	0.53	
2,414.0	21.10	287.90	2,328.7	275.4	-432.1	504.6	0.50	0.21	
2,508.0	21.90	287.90	2,416.1	286.0	-464.9	536.0	0.85	0.85	
2,602.0	20.40	287.10	2,503.8	296.2	-497.2	566.7	1.62	-1.60	
2,695.0	21.10	287.20	2,590.8	306.0	-528.7	596.5	0.75	0.75	
2,789.0	21.40	290.20	2,678.4	316.9	-561.0	627.6	1.20	0.32	
2,883.0	20.80	289.30	2,766.1	328.3	-592.8	658.8	0.73	-0.64	
2,976.0	20.60	291.90	2,853.1	339.9	-623.6	689.3	1.01	-0.22	
3,068.0	19.30	298.70	2,939.6	353.2	-651.9	719.2	2.89	-1.41	
3,162.0	20.30	302.20	3,028.0	369.4	-679.3	750.4	1.65	1.06	
3,255.0	20.20	302.80	3,115.3	386.7	-706.5	782.1	0.25	-0.11	
3,349.0	19.80	301.90	3,203.6	403.9	-733.7	813.7	0.54	-0.43	
3,442.0	19.70	296.50	3,291.1	419.2	-761.1	844.3	1.96	-0.11	
3,536.0	21.00	296.60	3,379.3	433.8	-790.3	875.7	1.38	1.38	
3,630.0	21.60	296.20	3,466.8	449.0	-820.9	908.5	0.66	0.64	
3,728.0	22.00	295.00	3,557.8	464.7	-853.7	943.3	0.61	0.41	
3,823.0	22.20	294.80	3,645.9	479.8	-886.1	977.4	0.22	0.21	
3,917.0	21.30	295.00	3,733.2	494.4	-917.7	1,010.6	0.96	-0.96	
4,012.0	20.30	294.60	3,822.0	508.6	-948.3	1,042.7	1.06	-1.05	
4,106.0	21.20	294.50	3,909.9	522.4	-978.6	1,074.4	0.96	0.96	
4,201.0	19.60	294.00	3,998.9	536.0	-1,008.8	1,105.8	1.69	-1.68	
4,295.0	19.90	294.80	4,087.4	549.1	-1,037.7	1,136.0	0.43	0.32	
4,389.0	20.60	297.60	4,175.6	563.5	-1,066.9	1,167.2	1.27	0.74	
4,484.0	19.30	297.20	4,264.9	578.4	-1,095.7	1,198.5	1.38	-1.37	
4,578.0	17.00	297.20	4,354.2	591.8	-1,121.7	1,226.8	2.45	-2.45	
4,672.0	15.80	297.20	4,444.4	603.9	-1,145.3	1,252.4	1.28	-1.28	
4,766.0	14.20	297.20	4,535.2	615.1	-1,167.0	1,275.8	1.70	-1.70	
4,861.0	12.80	296.60	4,627.5	625.1	-1,186.8	1,297.2	1.48	-1.47	
4,955.0	11.80	296.00	4,719.4	634.0	-1,204.7	1,316.4	1.07	-1.06	
5,048.0	10.70	296.10	4,810.6	641.9	-1,221.0	1,333.8	1.18	-1.18	
5,142.0	8.90	295.90	4,903.2	649.0	-1,235.4	1,349.2	1.92	-1.91	
5,237.0	7.00	295.60	4,997.3	654.7	-1,247.2	1,361.7	2.00	-2.00	
5,331.0	5.70	293.40	5,090.7	659.0	-1,256.7	1,371.6	1.41	-1.38	
5,425.0	4.50	296.70	5,184.3	662.5	-1,264.2	1,379.6	1.31	-1.28	
5,519.0	3.90	298.30	5,278.1	665.7	-1,270.4	1,386.2	0.65	-0.64	
5,613.0	3.00	300.60	5,371.9	668.5	-1,275.3	1,391.7	0.97	-0.96	
5,707.0	2.40	301.60	5,465.8	670.7	-1,279.1	1,396.1	0.64	-0.64	
5,801.0	1.90	301.30	5,559.7	672.6	-1,282.1	1,399.5	0.53	-0.53	
5,895.0	1.60	298.70	5,653.7	674.0	-1,284.6	1,402.3	0.33	-0.32	
5,989.0	1.20	295.40	5,747.7	675.1	-1,286.6	1,404.6	0.43	-0.43	
6,084.0	1.10	300.80	5,842.6	676.0	-1,288.3	1,406.4	0.16	-0.11	
6,178.0	1.00	313.20	5,936.6	677.0	-1,289.7	1,408.1	0.26	-0.11	
6,272.0	0.50	317.00	6,030.6	677.8	-1,290.5	1,409.3	0.53	-0.53	
6,367.0	0.50	316.90	6,125.6	678.5	-1,291.1	1,410.2	0.00	0.00	
6,712.0	0.00	355.70	6,470.6	679.6	-1,292.1	1,411.7	0.14	-0.14	
6,837.0	0.10	110.90	6,595.6	679.5	-1,292.0	1,411.6	0.08	0.08	Last Cathedral Survey @ 6,837' MD

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope D-18
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4605.0ft (Original Well Elev)
<b>Site:</b>	Antelope D-18 Pad	<b>MD Reference:</b>	KBE @ 4605.0ft (Original Well Elev)
<b>Well:</b>	Antelope D-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
6,887.0	0.10	110.90	6,645.6	679.5	-1,292.0	1,411.5	0.00	0.00	Projection to Bit @ 6,887'

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									
Antelope D-18 PBHL	0.00	0.00	6,633.0	711.9	-1,309.1	1,388,974.93	3,313,347.94	40.395674	-104.374980
- actual wellpath misses target center by 36.6ft at 6874.3ft MD (6633.0 TVD, 679.5 N, -1292.0 E)									
- Circle (radius 50.0)									
Antelope D-18 TGT	0.00	0.00	6,025.0	711.9	-1,309.1	1,388,974.93	3,313,347.94	40.395674	-104.374980
- actual wellpath misses target center by 38.8ft at 6266.9ft MD (6025.5 TVD, 677.8 N, -1290.5 E)									
- Point									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,837.0	6,595.6	679.5	-1,292.0	Last Cathedral Survey @ 6,837' MD
6,887.0	6,645.6	679.5	-1,292.0	Projection to Bit @ 6,887'

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_