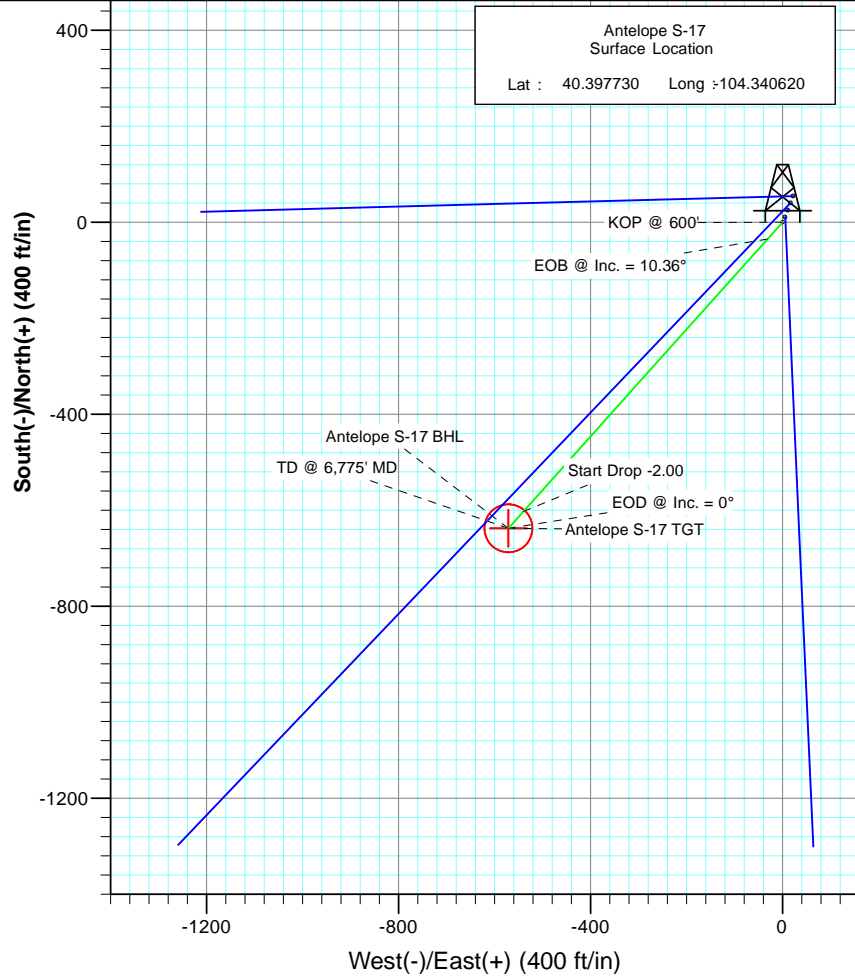



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	1118.1	10.36	221.85	1115.3	-34.8	-31.2	2.00	221.85	46.7	
4	5356.7	10.36	221.85	5284.7	-602.7	-539.8	0.00	0.00	809.1	
5	5874.8	0.00	0.00	5800.0	-637.5	-571.0	2.00	180.00	855.8	Antelope S-17 TGT
6	6774.8	0.00	0.00	6700.0	-637.5	-571.0	0.00	0.00	855.8	Antelope S-17 BHL



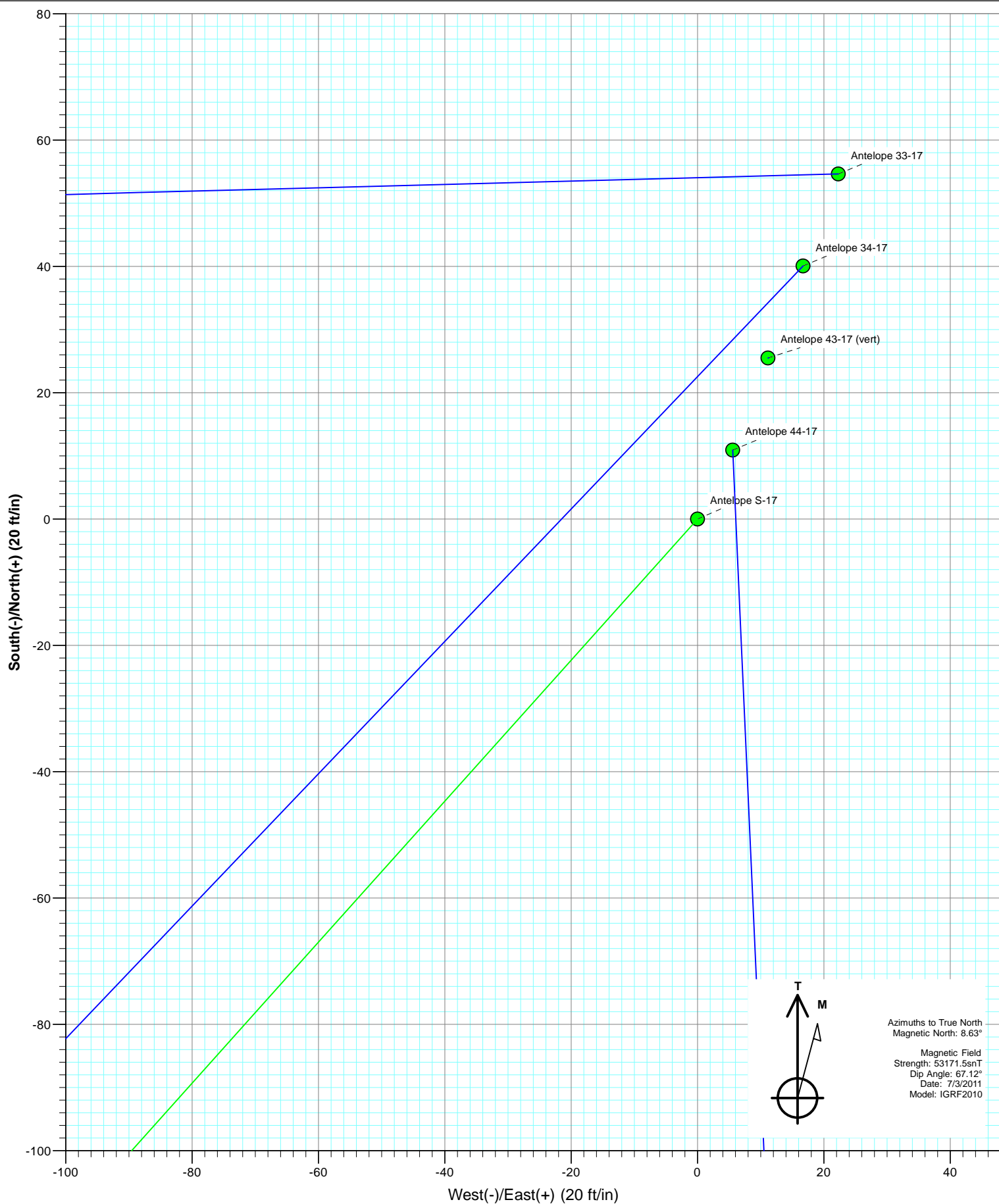
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
6252.0	6326.8	Niobrara

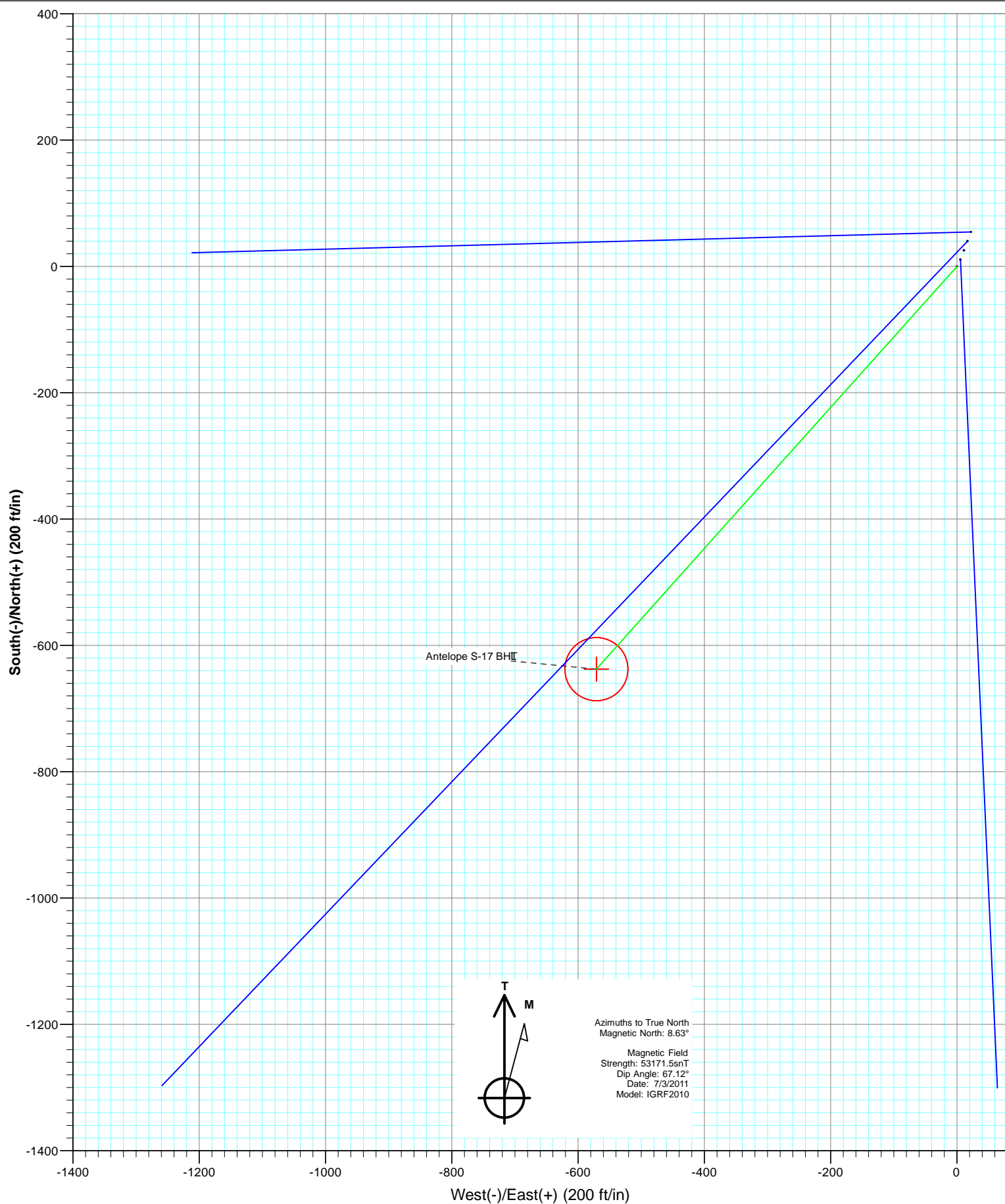
		Azimuths to True North Magnetic North: 8.63° Magnetic Field Strength: 53171.5nT Dip Angle: 67.12° Date: 7/3/2011 Model: IGRF2010	
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Plan #2 Antelope S-17 115XXX; SC		KBE @ 4701.0ft (Original Well Elev) North American Datum 1983 Well Antelope S-17, True North	
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Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD
TD	No Target (Freehand)	221.85	Slot		0.0	0.0		0.0

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Antelope S-17 TGT	5800.0	-637.5	-571.0	40.395980	-104.342670
Antelope S-17 BHL	6700.0	-637.5	-571.0	40.395980	-104.342670





Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Antelope S-17
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site:	Antelope 43-17 Pad	North Reference:	True
Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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 43-17 Pad			
Site Position:		Northing:	1,389,872.78 ft	Latitude:	40.397800
From:	Lat/Long	Easting:	3,322,918.40 ft	Longitude:	-104.340580
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.75 °

Well	Antelope S-17					
Well Position	+N/-S	0.0 ft	Northing:	1,389,847.11 ft	Latitude:	40.397730
	+E/-W	0.0 ft	Easting:	3,322,907.60 ft	Longitude:	-104.340620
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,691.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	7/3/2011	8.63	67.12	53,171

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	221.85

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
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	
1,118.1	10.36	221.85	1,115.3	-34.8	-31.2	2.00	2.00	0.00	221.85	
5,356.7	10.36	221.85	5,284.7	-602.7	-539.8	0.00	0.00	0.00	0.00	
5,874.8	0.00	0.00	5,800.0	-637.5	-571.0	2.00	-2.00	0.00	180.00	Antelope S-17 TGT
6,774.8	0.00	0.00	6,700.0	-637.5	-571.0	0.00	0.00	0.00	0.00	Antelope S-17 BHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Antelope S-17
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site:	Antelope 43-17 Pad	North Reference:	True
Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	221.85	700.0	-1.3	-1.2	1.7	2.00	2.00	
800.0	4.00	221.85	799.8	-5.2	-4.7	7.0	2.00	2.00	
900.0	6.00	221.85	899.5	-11.7	-10.5	15.7	2.00	2.00	
1,000.0	8.00	221.85	998.7	-20.8	-18.6	27.9	2.00	2.00	
1,100.0	10.00	221.85	1,097.5	-32.4	-29.0	43.5	2.00	2.00	
1,118.1	10.36	221.85	1,115.3	-34.8	-31.2	46.7	2.00	2.00	EOB @ Inc. = 10.36°
1,200.0	10.36	221.85	1,195.8	-45.8	-41.0	61.5	0.00	0.00	
1,300.0	10.36	221.85	1,294.2	-59.2	-53.0	79.4	0.00	0.00	
1,400.0	10.36	221.85	1,392.6	-72.6	-65.0	97.4	0.00	0.00	
1,500.0	10.36	221.85	1,491.0	-86.0	-77.0	115.4	0.00	0.00	
1,600.0	10.36	221.85	1,589.3	-99.4	-89.0	133.4	0.00	0.00	
1,700.0	10.36	221.85	1,687.7	-112.8	-101.0	151.4	0.00	0.00	
1,800.0	10.36	221.85	1,786.1	-126.2	-113.0	169.4	0.00	0.00	
1,900.0	10.36	221.85	1,884.4	-139.6	-125.0	187.4	0.00	0.00	
2,000.0	10.36	221.85	1,982.8	-153.0	-137.0	205.3	0.00	0.00	
2,100.0	10.36	221.85	2,081.2	-166.4	-149.0	223.3	0.00	0.00	
2,200.0	10.36	221.85	2,179.5	-179.8	-161.0	241.3	0.00	0.00	
2,300.0	10.36	221.85	2,277.9	-193.2	-173.0	259.3	0.00	0.00	
2,400.0	10.36	221.85	2,376.3	-206.6	-185.0	277.3	0.00	0.00	
2,500.0	10.36	221.85	2,474.6	-220.0	-197.0	295.3	0.00	0.00	
2,600.0	10.36	221.85	2,573.0	-233.3	-209.0	313.3	0.00	0.00	
2,700.0	10.36	221.85	2,671.4	-246.7	-221.0	331.3	0.00	0.00	
2,800.0	10.36	221.85	2,769.8	-260.1	-233.0	349.2	0.00	0.00	
2,900.0	10.36	221.85	2,868.1	-273.5	-245.0	367.2	0.00	0.00	
3,000.0	10.36	221.85	2,966.5	-286.9	-257.0	385.2	0.00	0.00	
3,100.0	10.36	221.85	3,064.9	-300.3	-269.0	403.2	0.00	0.00	
3,200.0	10.36	221.85	3,163.2	-313.7	-281.0	421.2	0.00	0.00	
3,300.0	10.36	221.85	3,261.6	-327.1	-293.0	439.2	0.00	0.00	
3,400.0	10.36	221.85	3,360.0	-340.5	-305.0	457.2	0.00	0.00	
3,500.0	10.36	221.85	3,458.3	-353.9	-317.0	475.1	0.00	0.00	
3,600.0	10.36	221.85	3,556.7	-367.3	-329.0	493.1	0.00	0.00	
3,700.0	10.36	221.85	3,655.1	-380.7	-341.0	511.1	0.00	0.00	
3,800.0	10.36	221.85	3,753.4	-394.1	-353.0	529.1	0.00	0.00	
3,900.0	10.36	221.85	3,851.8	-407.5	-365.0	547.1	0.00	0.00	
4,000.0	10.36	221.85	3,950.2	-420.9	-377.0	565.1	0.00	0.00	
4,100.0	10.36	221.85	4,048.5	-434.3	-389.0	583.1	0.00	0.00	
4,200.0	10.36	221.85	4,146.9	-447.7	-401.0	601.0	0.00	0.00	
4,300.0	10.36	221.85	4,245.3	-461.1	-413.0	619.0	0.00	0.00	
4,400.0	10.36	221.85	4,343.7	-474.5	-425.0	637.0	0.00	0.00	
4,500.0	10.36	221.85	4,442.0	-487.9	-437.0	655.0	0.00	0.00	
4,600.0	10.36	221.85	4,540.4	-501.3	-449.0	673.0	0.00	0.00	
4,700.0	10.36	221.85	4,638.8	-514.7	-461.0	691.0	0.00	0.00	
4,800.0	10.36	221.85	4,737.1	-528.1	-473.0	709.0	0.00	0.00	
4,900.0	10.36	221.85	4,835.5	-541.5	-485.0	727.0	0.00	0.00	
5,000.0	10.36	221.85	4,933.9	-554.9	-497.0	744.9	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Antelope S-17
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site:	Antelope 43-17 Pad	North Reference:	True
Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	10.36	221.85	5,032.2	-568.3	-509.0	762.9	0.00	0.00	
5,200.0	10.36	221.85	5,130.6	-581.7	-521.0	780.9	0.00	0.00	
5,300.0	10.36	221.85	5,229.0	-595.1	-533.0	798.9	0.00	0.00	
5,356.7	10.36	221.85	5,284.7	-602.7	-539.8	809.1	0.00	0.00	Start Drop -2.00
5,400.0	9.50	221.85	5,327.4	-608.3	-544.8	816.6	2.00	-2.00	
5,500.0	7.50	221.85	5,426.3	-619.3	-554.7	831.3	2.00	-2.00	
5,600.0	5.50	221.85	5,525.7	-627.7	-562.2	842.6	2.00	-2.00	
5,700.0	3.50	221.85	5,625.3	-633.5	-567.4	850.5	2.00	-2.00	
5,800.0	1.50	221.85	5,725.2	-636.8	-570.3	854.8	2.00	-2.00	
5,874.8	0.00	0.00	5,800.0	-637.5	-571.0	855.8	2.00	-2.00	EOD @ Inc. = 0°
5,900.0	0.00	0.00	5,825.2	-637.5	-571.0	855.8	0.00	0.00	
6,000.0	0.00	0.00	5,925.2	-637.5	-571.0	855.8	0.00	0.00	
6,100.0	0.00	0.00	6,025.2	-637.5	-571.0	855.8	0.00	0.00	
6,200.0	0.00	0.00	6,125.2	-637.5	-571.0	855.8	0.00	0.00	
6,300.0	0.00	0.00	6,225.2	-637.5	-571.0	855.8	0.00	0.00	
6,326.8	0.00	0.00	6,252.0	-637.5	-571.0	855.8	0.00	0.00	Niobrara
6,400.0	0.00	0.00	6,325.2	-637.5	-571.0	855.8	0.00	0.00	
6,500.0	0.00	0.00	6,425.2	-637.5	-571.0	855.8	0.00	0.00	
6,600.0	0.00	0.00	6,525.2	-637.5	-571.0	855.8	0.00	0.00	
6,700.0	0.00	0.00	6,625.2	-637.5	-571.0	855.8	0.00	0.00	
6,774.8	0.00	0.00	6,700.0	-637.5	-571.0	855.8	0.00	0.00	TD @ 6,775' MD

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 S-17 BHL	0.00	0.00	6,700.0	-637.5	-571.0	1,389,202.21	3,322,345.00	40.395980	-104.342670
- plan hits target center									
- Circle (radius 50.0)									
Antelope S-17 TGT	0.00	0.00	5,800.0	-637.5	-571.0	1,389,202.21	3,322,345.00	40.395980	-104.342670
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,326.8	6,252.0	Niobrara		0.00		

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Antelope S-17
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site:	Antelope 43-17 Pad	North Reference:	True
Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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'
1,118.1	1,115.3	-34.8	-31.2	EOB @ Inc. = 10.36°
5,356.7	5,284.7	-602.7	-539.8	Start Drop -2.00
5,874.8	5,800.0	-637.5	-571.0	EOD @ Inc. = 0°
6,774.8	6,700.0	-637.5	-571.0	TD @ 6,775' MD

Bonanza Creek Energy Operating Company, LLC

Weld County

Antelope 43-17 Pad

Antelope S-17

DD

Plan #2

Anticollision Report

11 July, 2011

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope S-17
Project:	Weld County	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Reference Site:	Antelope 43-17 Pad	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	7/11/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	6,774.8	Plan #2 (DD)	MWD	Geolink MWD

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Antelope 43-17 Pad						
Antelope 33-17 - DD - Plan #2	0.0	0.0	59.0			
Antelope 33-17 - DD - Plan #2	600.0	600.0	59.0	59.0	10,000.000	CC, ES
Antelope 34-17 - DD - Plan #2	0.0	0.0	43.4			
Antelope 34-17 - DD - Plan #2	1,582.6	1,592.2	19.7	19.7	10,000.000	CC, ES
Antelope 43-17 (vert) - DD - Plan #2	0.0	0.0	27.8			
Antelope 43-17 (vert) - DD - Plan #2	600.0	600.0	27.8	27.8	10,000.000	CC, ES
Antelope 44-17 - DD - Plan #2	0.0	0.0	12.3			
Antelope 44-17 - DD - Plan #2	600.0	600.0	12.3	12.3	10,000.000	CC, ES

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope S-17
Project:	Weld County	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Reference Site:	Antelope 43-17 Pad	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Antelope 43-17 Pad - Antelope 33-17 - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	22.18	54.7	22.3	59.0					
100.0	100.0	100.0	100.0	0.2	0.2	22.18	54.7	22.3	59.0	59.0	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	22.18	54.7	22.3	59.0	59.0	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	22.18	54.7	22.3	59.0	59.0	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	22.18	54.7	22.3	59.0	59.0	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	22.18	54.7	22.3	59.0	59.0	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	22.18	54.7	22.3	59.0	59.0	0.00	N/A CC, ES		
700.0	700.0	700.8	700.8	1.2	1.2	159.34	54.6	20.5	60.0	60.0	0.00	N/A		
800.0	799.8	801.5	801.3	1.4	1.4	156.54	54.5	15.2	62.9	62.9	0.00	N/A		
900.0	899.5	902.0	901.4	1.6	1.6	152.45	54.2	6.4	68.1	68.1	0.00	N/A		
1,000.0	998.7	1,002.1	1,000.8	1.8	1.8	147.68	53.9	-5.9	75.8	75.8	0.00	N/A		
1,100.0	1,097.5	1,101.8	1,099.2	2.1	2.1	142.84	53.5	-21.5	86.3	86.3	0.00	N/A		
1,200.0	1,195.8	1,200.9	1,196.5	2.4	2.4	138.03	53.0	-40.5	98.8	98.8	0.00	N/A		
1,300.0	1,294.2	1,299.5	1,292.5	2.7	2.8	132.62	52.4	-62.7	112.0	112.0	0.00	N/A		
1,400.0	1,392.6	1,397.4	1,387.1	3.1	3.3	126.91	51.7	-87.9	126.5	126.5	0.00	N/A		
1,500.0	1,491.0	1,495.4	1,481.5	3.4	3.7	121.92	51.0	-114.3	142.3	142.3	0.00	N/A		
1,600.0	1,589.3	1,593.5	1,576.0	3.7	4.2	117.94	50.3	-140.7	158.9	158.9	0.00	N/A		
1,700.0	1,687.7	1,691.5	1,670.4	4.1	4.7	114.71	49.6	-167.1	176.2	176.2	0.00	N/A		
1,800.0	1,786.1	1,789.6	1,764.9	4.4	5.1	112.07	48.9	-193.5	193.9	193.9	0.00	N/A		
1,900.0	1,884.4	1,887.7	1,859.3	4.8	5.6	109.87	48.2	-219.9	211.9	211.9	0.00	N/A		
2,000.0	1,982.8	1,985.7	1,953.7	5.1	6.1	108.01	47.5	-246.3	230.2	230.2	0.00	N/A		
2,100.0	2,081.2	2,083.8	2,048.2	5.5	6.6	106.43	46.8	-272.7	248.7	248.7	0.00	N/A		
2,200.0	2,179.5	2,181.8	2,142.6	5.8	7.1	105.07	46.1	-299.1	267.3	267.3	0.00	N/A		
2,300.0	2,277.9	2,279.9	2,237.1	6.2	7.6	103.88	45.4	-325.5	286.1	286.1	0.00	N/A		
2,400.0	2,376.3	2,378.0	2,331.5	6.5	8.1	102.84	44.7	-351.9	304.9	304.9	0.00	N/A		
2,500.0	2,474.6	2,476.0	2,425.9	6.9	8.6	101.92	44.0	-378.3	323.9	323.9	0.00	N/A		
2,600.0	2,573.0	2,574.1	2,520.4	7.2	9.1	101.11	43.3	-404.7	342.9	342.9	0.00	N/A		
2,700.0	2,671.4	2,672.1	2,614.8	7.6	9.6	100.38	42.6	-431.1	362.0	362.0	0.00	N/A		
2,800.0	2,769.8	2,770.2	2,709.2	8.0	10.1	99.72	41.9	-457.5	381.2	381.2	0.00	N/A		
2,900.0	2,868.1	2,868.3	2,803.7	8.3	10.6	99.12	41.2	-483.9	400.3	400.3	0.00	N/A		
3,000.0	2,966.5	2,966.3	2,898.1	8.7	11.1	98.58	40.5	-510.3	419.6	419.6	0.00	N/A		
3,100.0	3,064.9	3,064.4	2,992.6	9.0	11.6	98.09	39.8	-536.7	438.8	438.8	0.00	N/A		
3,200.0	3,163.2	3,162.5	3,087.0	9.4	12.1	97.64	39.1	-563.1	458.1	458.1	0.00	N/A		
3,300.0	3,261.6	3,260.5	3,181.4	9.7	12.6	97.22	38.4	-589.5	477.4	477.4	0.00	N/A		
3,400.0	3,360.0	3,358.6	3,275.9	10.1	13.1	96.84	37.7	-615.9	496.8	496.8	0.00	N/A		

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope S-17
Project:	Weld County	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Reference Site:	Antelope 43-17 Pad	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Antelope 43-17 Pad - Antelope 34-17 - DD - Plan #2														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	22.63	40.1	16.7	43.4						
100.0	100.0	100.0	100.0	0.2	0.2	22.63	40.1	16.7	43.4	43.4	0.00	N/A			
200.0	200.0	200.0	200.0	0.3	0.3	22.63	40.1	16.7	43.4	43.4	0.00	N/A			
300.0	300.0	300.0	300.0	0.5	0.5	22.63	40.1	16.7	43.4	43.4	0.00	N/A			
400.0	400.0	400.0	400.0	0.7	0.7	22.63	40.1	16.7	43.4	43.4	0.00	N/A			
500.0	500.0	500.0	500.0	0.9	0.9	22.63	40.1	16.7	43.4	43.4	0.00	N/A			
600.0	600.0	600.0	600.0	1.0	1.0	22.63	40.1	16.7	43.4	43.4	0.00	N/A			
700.0	700.0	701.4	701.4	1.2	1.2	160.70	38.8	15.5	43.4	43.4	0.00	N/A			
800.0	799.8	802.9	802.7	1.4	1.4	160.46	34.9	11.8	43.4	43.4	0.00	N/A			
900.0	899.5	904.3	903.7	1.6	1.6	160.05	28.4	5.6	43.4	43.4	0.00	N/A			
1,000.0	998.7	1,005.7	1,004.4	1.8	1.8	159.48	19.3	-3.1	43.4	43.4	0.00	N/A			
1,100.0	1,097.5	1,107.1	1,104.5	2.1	2.1	158.75	7.7	-14.2	43.3	43.3	0.00	N/A			
1,200.0	1,195.8	1,208.5	1,203.9	2.4	2.5	157.26	-6.5	-27.7	42.2	42.2	0.00	N/A			
1,300.0	1,294.2	1,309.7	1,302.4	2.7	2.9	153.35	-23.2	-43.7	38.1	38.1	0.00	N/A			
1,400.0	1,392.6	1,410.3	1,399.6	3.1	3.3	144.96	-42.3	-61.9	31.2	31.2	0.00	N/A			
1,500.0	1,491.0	1,510.3	1,495.1	3.4	3.8	125.86	-63.7	-82.3	23.3	23.3	0.00	N/A			
1,582.6	1,572.2	1,592.2	1,572.5	3.7	4.3	93.72	-83.0	-100.7	19.7	19.7	0.00	N/A CC, ES			
1,600.0	1,589.3	1,609.3	1,588.6	3.7	4.4	85.43	-87.2	-104.8	19.9	19.9	0.00	N/A			
1,700.0	1,687.7	1,707.1	1,679.8	4.1	5.0	46.48	-112.8	-129.1	29.2	29.2	0.00	N/A			
1,800.0	1,786.1	1,803.6	1,768.5	4.4	5.7	28.28	-140.2	-155.3	47.9	47.9	0.00	N/A			
1,900.0	1,884.4	1,899.3	1,855.3	4.8	6.4	19.77	-169.3	-183.1	71.5	71.5	0.00	N/A			
2,000.0	1,982.8	1,996.0	1,942.7	5.1	7.2	15.36	-199.2	-211.6	96.4	96.4	0.00	N/A			
2,100.0	2,081.2	2,092.6	2,030.1	5.5	7.9	12.77	-229.0	-240.0	121.7	121.7	0.00	N/A			
2,200.0	2,179.5	2,189.2	2,117.5	5.8	8.7	11.07	-258.8	-268.5	147.2	147.2	0.00	N/A			
2,300.0	2,277.9	2,285.9	2,204.9	6.2	9.4	9.87	-288.7	-297.0	172.7	172.7	0.00	N/A			
2,400.0	2,376.3	2,382.5	2,292.3	6.5	10.2	8.98	-318.5	-325.4	198.3	198.3	0.00	N/A			
2,500.0	2,474.6	2,479.1	2,379.7	6.9	10.9	8.30	-348.3	-353.9	223.9	223.9	0.00	N/A			
2,600.0	2,573.0	2,575.8	2,467.1	7.2	11.7	7.75	-378.2	-382.4	249.5	249.5	0.00	N/A			
2,700.0	2,671.4	2,672.4	2,554.5	7.6	12.4	7.31	-408.0	-410.9	275.2	275.2	0.00	N/A			
2,800.0	2,769.8	2,769.0	2,641.9	8.0	13.2	6.94	-437.8	-439.3	300.8	300.8	0.00	N/A			
2,900.0	2,868.1	2,865.7	2,729.3	8.3	13.9	6.63	-467.7	-467.8	326.5	326.5	0.00	N/A			
3,000.0	2,966.5	2,962.3	2,816.7	8.7	14.7	6.36	-497.5	-496.3	352.2	352.2	0.00	N/A			
3,100.0	3,064.9	3,058.9	2,904.1	9.0	15.5	6.14	-527.3	-524.7	377.9	377.9	0.00	N/A			
3,200.0	3,163.2	3,155.6	2,991.4	9.4	16.2	5.94	-557.2	-553.2	403.6	403.6	0.00	N/A			
3,300.0	3,261.6	3,252.2	3,078.8	9.7	17.0	5.76	-587.0	-581.7	429.3	429.3	0.00	N/A			
3,400.0	3,360.0	3,348.8	3,166.2	10.1	17.8	5.60	-616.9	-610.1	455.0	455.0	0.00	N/A			
3,500.0	3,458.3	3,445.5	3,253.6	10.5	18.5	5.46	-646.7	-638.6	480.7	480.7	0.00	N/A			

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope S-17
Project:	Weld County	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Reference Site:	Antelope 43-17 Pad	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Antelope 43-17 Pad - Antelope 43-17 (vert) - DD - Plan #2														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	23.60	25.5	11.1	27.8						
100.0	100.0	100.0	100.0	0.2	0.2	23.60	25.5	11.1	27.8	27.8	0.00	N/A			
200.0	200.0	200.0	200.0	0.3	0.3	23.60	25.5	11.1	27.8	27.8	0.00	N/A			
300.0	300.0	300.0	300.0	0.5	0.5	23.60	25.5	11.1	27.8	27.8	0.00	N/A			
400.0	400.0	400.0	400.0	0.7	0.7	23.60	25.5	11.1	27.8	27.8	0.00	N/A			
500.0	500.0	500.0	500.0	0.9	0.9	23.60	25.5	11.1	27.8	27.8	0.00	N/A			
600.0	600.0	600.0	600.0	1.0	1.0	23.60	25.5	11.1	27.8	27.8	0.00	N/A CC, ES			
700.0	700.0	700.0	700.0	1.2	1.2	162.80	25.5	11.1	29.5	29.5	0.00	N/A			
800.0	799.8	799.8	799.8	1.4	1.4	165.34	25.5	11.1	34.5	34.5	0.00	N/A			
900.0	899.5	899.5	899.5	1.6	1.6	168.25	25.5	11.1	43.0	43.0	0.00	N/A			
1,000.0	998.7	998.7	998.7	1.8	1.7	170.79	25.5	11.1	55.0	55.0	0.00	N/A			
1,100.0	1,097.5	1,097.5	1,097.5	2.1	1.9	172.79	25.5	11.1	70.5	70.5	0.00	N/A			
1,200.0	1,195.8	1,195.8	1,195.8	2.4	2.1	174.24	25.5	11.1	88.3	88.3	0.00	N/A			
1,300.0	1,294.2	1,294.2	1,294.2	2.7	2.2	175.22	25.5	11.1	106.2	106.2	0.00	N/A			
1,400.0	1,392.6	1,392.6	1,392.6	3.1	2.4	175.91	25.5	11.1	124.2	124.2	0.00	N/A			
1,500.0	1,491.0	1,491.0	1,491.0	3.4	2.6	176.43	25.5	11.1	142.1	142.1	0.00	N/A			
1,600.0	1,589.3	1,589.3	1,589.3	3.7	2.8	176.83	25.5	11.1	160.1	160.1	0.00	N/A			
1,700.0	1,687.7	1,687.7	1,687.7	4.1	2.9	177.15	25.5	11.1	178.0	178.0	0.00	N/A			
1,800.0	1,786.1	1,786.1	1,786.1	4.4	3.1	177.41	25.5	11.1	196.0	196.0	0.00	N/A			
1,900.0	1,884.4	1,884.4	1,884.4	4.8	3.3	177.63	25.5	11.1	214.0	214.0	0.00	N/A			
2,000.0	1,982.8	1,982.8	1,982.8	5.1	3.4	177.81	25.5	11.1	231.9	231.9	0.00	N/A			
2,100.0	2,081.2	2,081.2	2,081.2	5.5	3.6	177.97	25.5	11.1	249.9	249.9	0.00	N/A			
2,200.0	2,179.5	2,179.5	2,179.5	5.8	3.8	178.10	25.5	11.1	267.9	267.9	0.00	N/A			
2,300.0	2,277.9	2,277.9	2,277.9	6.2	4.0	178.22	25.5	11.1	285.9	285.9	0.00	N/A			
2,400.0	2,376.3	2,376.3	2,376.3	6.5	4.1	178.33	25.5	11.1	303.8	303.8	0.00	N/A			
2,500.0	2,474.6	2,474.6	2,474.6	6.9	4.3	178.42	25.5	11.1	321.8	321.8	0.00	N/A			
2,600.0	2,573.0	2,573.0	2,573.0	7.2	4.5	178.51	25.5	11.1	339.8	339.8	0.00	N/A			
2,700.0	2,671.4	2,671.4	2,671.4	7.6	4.6	178.58	25.5	11.1	357.8	357.8	0.00	N/A			
2,800.0	2,769.8	2,769.7	2,769.7	8.0	4.8	178.65	25.5	11.1	375.8	375.8	0.00	N/A			
2,900.0	2,868.1	2,868.1	2,868.1	8.3	5.0	178.71	25.5	11.1	393.8	393.8	0.00	N/A			
3,000.0	2,966.5	2,966.5	2,966.5	8.7	5.2	178.77	25.5	11.1	411.7	411.7	0.00	N/A			
3,100.0	3,064.9	3,064.9	3,064.9	9.0	5.3	178.82	25.5	11.1	429.7	429.7	0.00	N/A			
3,200.0	3,163.2	3,163.2	3,163.2	9.4	5.5	178.87	25.5	11.1	447.7	447.7	0.00	N/A			
3,300.0	3,261.6	3,261.6	3,261.6	9.7	5.7	178.91	25.5	11.1	465.7	465.7	0.00	N/A			
3,400.0	3,360.0	3,360.0	3,360.0	10.1	5.8	178.95	25.5	11.1	483.7	483.7	0.00	N/A			

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope S-17
Project:	Weld County	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Reference Site:	Antelope 43-17 Pad	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Antelope 43-17 Pad - Antelope 44-17 - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	27.01	10.9	5.6	12.3					
100.0	100.0	100.0	100.0	0.2	0.2	27.01	10.9	5.6	12.3	12.3	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	27.01	10.9	5.6	12.3	12.3	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	27.01	10.9	5.6	12.3	12.3	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	27.01	10.9	5.6	12.3	12.3	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	27.01	10.9	5.6	12.3	12.3	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	27.01	10.9	5.6	12.3	12.3	0.00	N/A CC, ES		
700.0	700.0	700.4	700.3	1.2	1.2	171.20	9.2	5.6	12.5	12.5	0.00	N/A		
800.0	799.8	800.6	800.4	1.4	1.4	-172.70	3.9	5.9	13.9	13.9	0.00	N/A		
900.0	899.5	900.6	900.1	1.6	1.6	-154.14	-4.8	6.3	18.1	18.1	0.00	N/A		
1,000.0	998.7	1,000.4	999.1	1.8	1.8	-140.13	-17.0	6.8	25.7	25.7	0.00	N/A		
1,100.0	1,097.5	1,099.7	1,097.2	2.1	2.1	-131.23	-32.5	7.5	36.5	36.5	0.00	N/A		
1,200.0	1,195.8	1,198.6	1,194.2	2.4	2.4	-124.73	-51.3	8.3	49.7	49.7	0.00	N/A		
1,300.0	1,294.2	1,296.9	1,290.0	2.7	2.8	-118.06	-73.3	9.3	64.1	64.1	0.00	N/A		
1,400.0	1,392.6	1,394.4	1,384.3	3.1	3.2	-111.61	-98.4	10.4	80.2	80.2	0.00	N/A		
1,500.0	1,491.0	1,491.8	1,477.7	3.4	3.7	-105.84	-126.2	11.7	98.3	98.3	0.00	N/A		
1,600.0	1,589.3	1,589.7	1,571.4	3.7	4.2	-101.72	-154.4	12.9	117.2	117.2	0.00	N/A		
1,700.0	1,687.7	1,687.6	1,665.1	4.1	4.7	-98.74	-182.6	14.2	136.6	136.6	0.00	N/A		
1,800.0	1,786.1	1,785.5	1,758.8	4.4	5.2	-96.51	-210.8	15.5	156.2	156.2	0.00	N/A		
1,900.0	1,884.4	1,883.4	1,852.6	4.8	5.7	-94.78	-239.1	16.7	176.1	176.1	0.00	N/A		
2,000.0	1,982.8	1,981.3	1,946.3	5.1	6.2	-93.40	-267.3	18.0	196.0	196.0	0.00	N/A		
2,100.0	2,081.2	2,079.2	2,040.0	5.5	6.7	-92.27	-295.5	19.2	216.0	216.0	0.00	N/A		
2,200.0	2,179.5	2,177.1	2,133.7	5.8	7.2	-91.33	-323.7	20.5	236.1	236.1	0.00	N/A		
2,300.0	2,277.9	2,275.0	2,227.5	6.2	7.7	-90.55	-352.0	21.8	256.3	256.3	0.00	N/A		
2,400.0	2,376.3	2,372.9	2,321.2	6.5	8.2	-89.87	-380.2	23.0	276.5	276.5	0.00	N/A		
2,500.0	2,474.6	2,470.8	2,414.9	6.9	8.7	-89.29	-408.4	24.3	296.7	296.7	0.00	N/A		
2,600.0	2,573.0	2,568.7	2,508.7	7.2	9.2	-88.78	-436.6	25.5	317.0	317.0	0.00	N/A		
2,700.0	2,671.4	2,666.6	2,602.4	7.6	9.7	-88.34	-464.8	26.8	337.2	337.2	0.00	N/A		
2,800.0	2,769.8	2,764.4	2,696.1	8.0	10.2	-87.94	-493.1	28.0	357.5	357.5	0.00	N/A		
2,900.0	2,868.1	2,862.3	2,789.8	8.3	10.8	-87.59	-521.3	29.3	377.8	377.8	0.00	N/A		
3,000.0	2,966.5	2,960.2	2,883.6	8.7	11.3	-87.27	-549.5	30.6	398.1	398.1	0.00	N/A		
3,100.0	3,064.9	3,058.1	2,977.3	9.0	11.8	-86.98	-577.7	31.8	418.5	418.5	0.00	N/A		
3,200.0	3,163.2	3,156.0	3,071.0	9.4	12.3	-86.72	-606.0	33.1	438.8	438.8	0.00	N/A		
3,300.0	3,261.6	3,253.9	3,164.7	9.7	12.8	-86.48	-634.2	34.3	459.1	459.1	0.00	N/A		
3,400.0	3,360.0	3,351.8	3,258.5	10.1	13.4	-86.27	-662.4	35.6	479.5	479.5	0.00	N/A		
3,500.0	3,458.3	3,449.7	3,352.2	10.5	13.9	-86.07	-690.6	36.9	499.8	499.8	0.00	N/A		

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope S-17
Project:	Weld County	TVD Reference:	KBE @ 4701.0ft (Original Well Elev)
Reference Site:	Antelope 43-17 Pad	MD Reference:	KBE @ 4701.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope S-17	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 4701.0ft (Original Well Elev)

Offset Depths are relative to Offset Datum

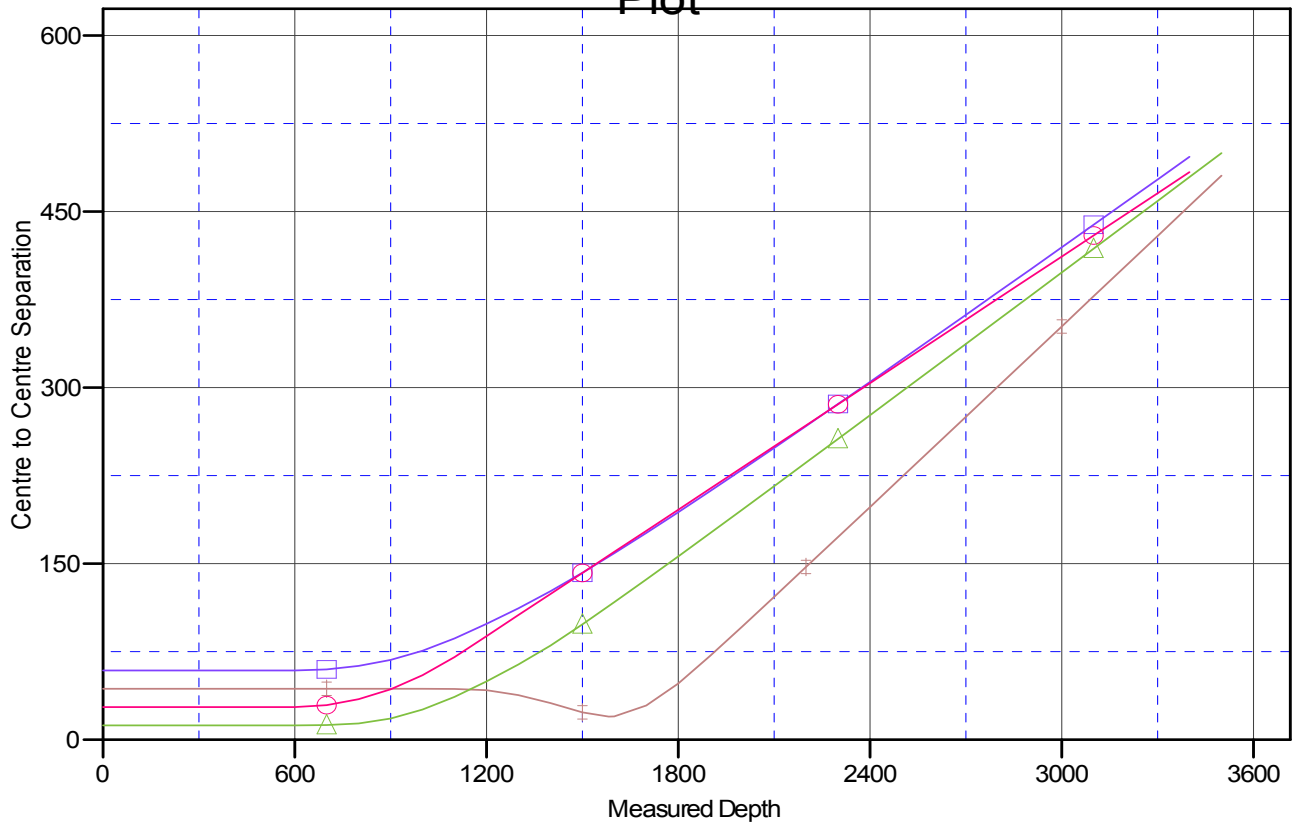
Central Meridian is -105.500000 °

Coordinates are relative to: Antelope S-17

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.75°

Ladder Plot



LEGEND

- Antelope 33-17, DD, Plan #2 V0
- Antelope 43-17 (vert), DD, Plan #2 V0
- Antelope 34-17, DD, Plan #2 V0
- Antelope 44-17, DD, Plan #2 V0