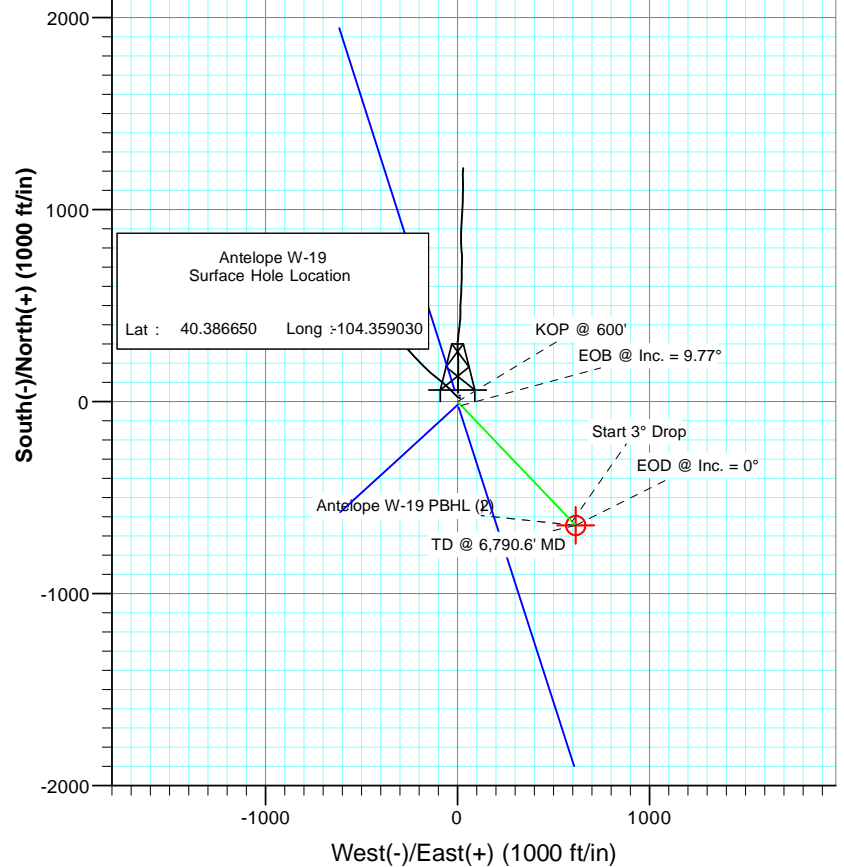
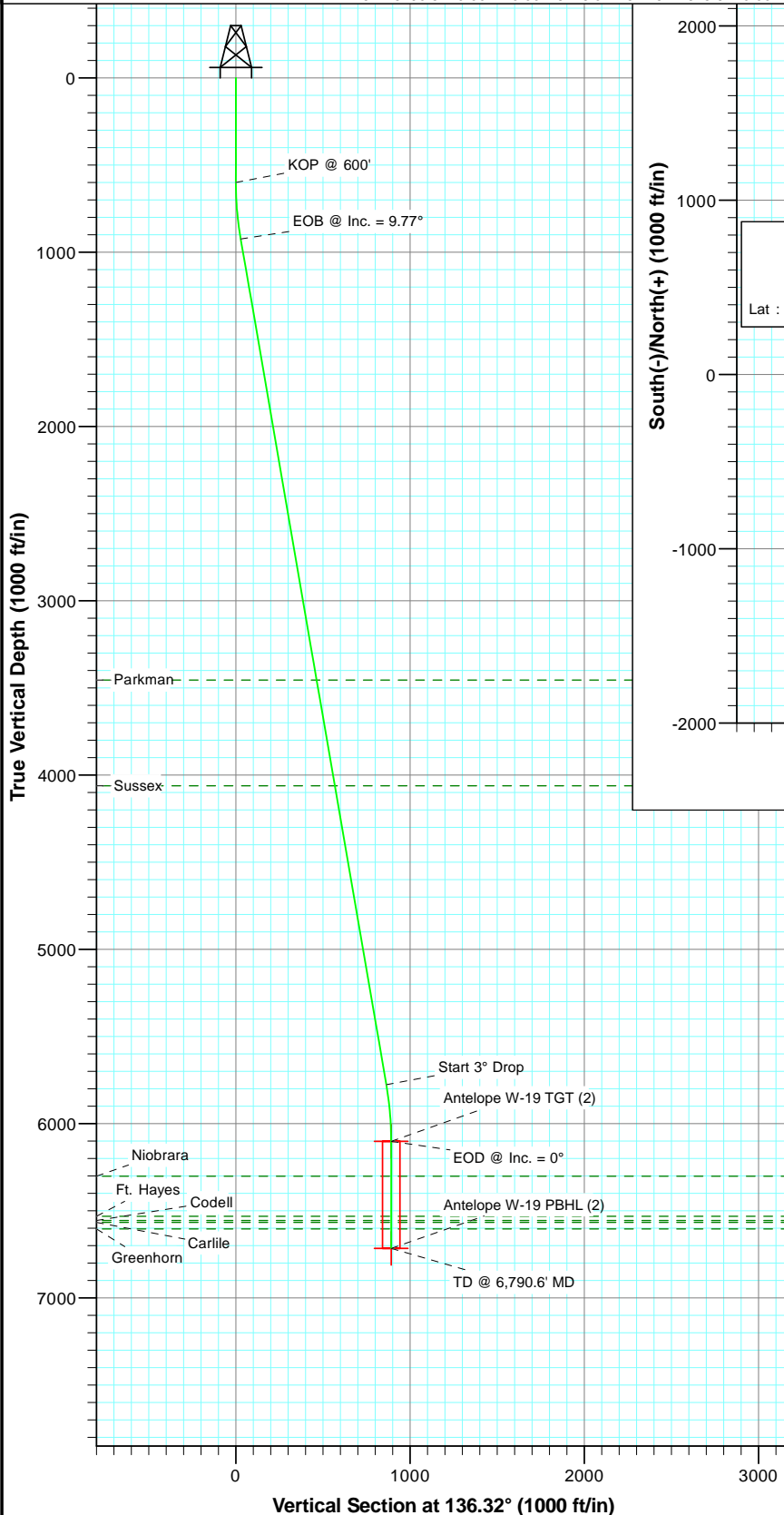


SECTION DETAILS

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	925.8	9.77	136.32	924.2	-20.0	19.1	3.00	136.32	27.7	
4	5850.8	9.77	136.32	5777.8	-624.7	596.5	0.00	0.00	863.8	Antelope W-19 TGT (2)
5	6176.6	0.00	0.00	6102.0	-644.8	615.6	3.00	180.00	891.5	Antelope W-19 PBHL (2)
6	6790.6	0.00	0.00	6716.0	-644.8	615.6	0.00	0.00	891.5	



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3455.0	3493.9	Parkman
4062.0	4109.8	Sussex
6302.0	6376.6	Niobrara
6532.0	6606.6	Ft. Hayes
6556.0	6630.6	Codell
6567.0	6641.6	Carlile
6604.0	6678.6	Greenhorn



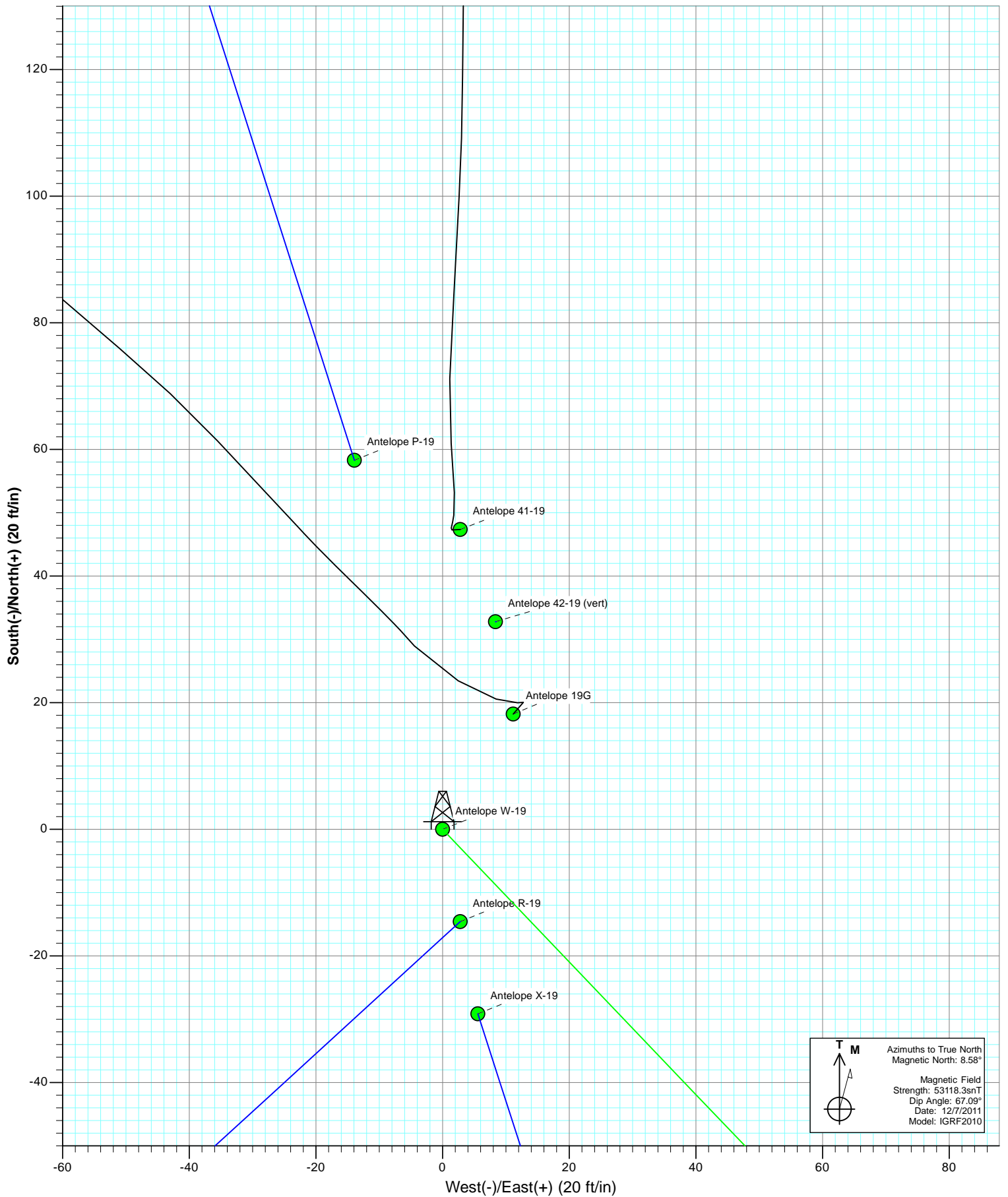
Azimuths to True North  
Magnetic North: 8.58°

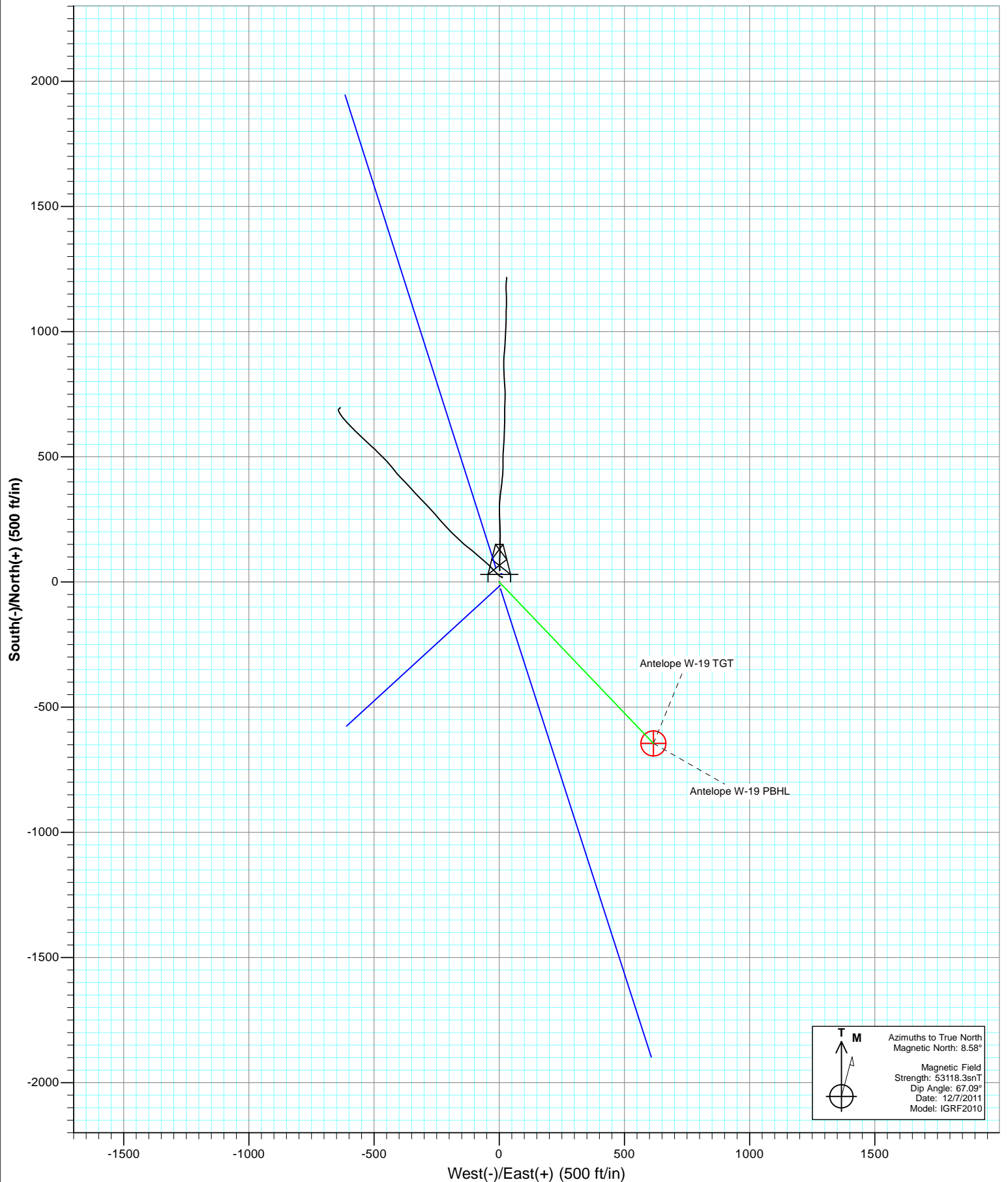
Magnetic Field  
Strength: 53118.5nT  
Dip Angle: 67.09°  
Date: 12/7/2011  
Model: IGRF2010

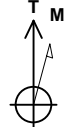
Plan #2  
Antelope W-19  
125XXX; SC

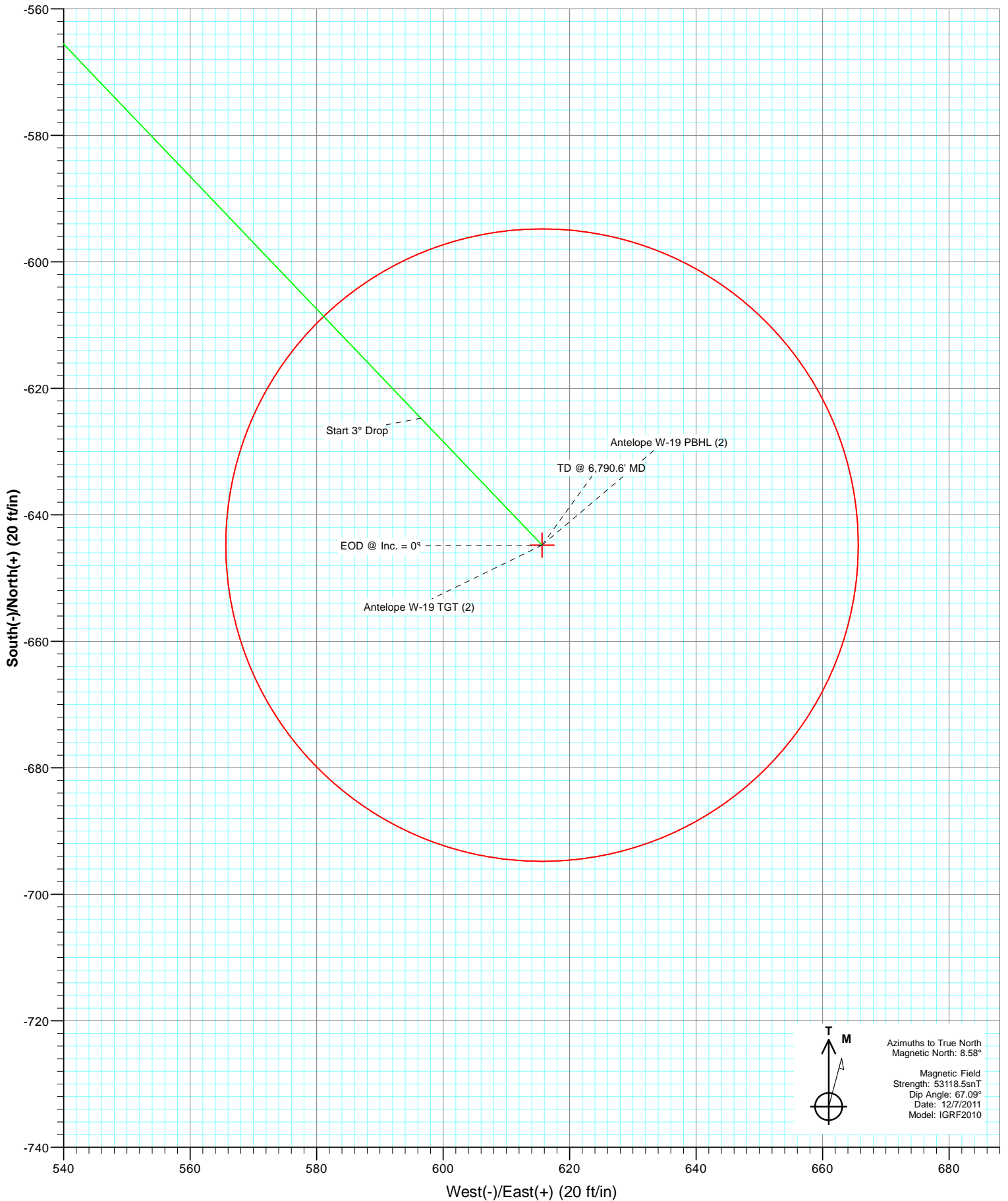
kbe @ 4662.0ft  
North American Datum 1983  
Well Antelope W-19, True North

Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
TD	No Target (Freehand)	136.32	Slot	0.0	0.0	0.0
Name		TVD			Latitude	Longitude
Antelope W-19 TGT (2)		6102.0	+N/-S		40.384880	-104.356820
Antelope W-19 PBHL (2)		6716.0	+E/-W		40.384880	-104.356820






 Azimuths to True North  
 Magnetic North: 8.58°  
 Magnetic Field  
 Strength: 53118.3nT  
 Dip Angle: 67.09°  
 Date: 12/7/2011  
 Model: IGRF2010



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site:</b>	Antelope 42-19 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

<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 42-19 Pad			
Site Position:		Northing:	1,385,777.44 ft	Latitude:	40.386740
From:	Lat/Long	Easting:	3,317,840.34 ft	Longitude:	-104.359000
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.74 °

Well	Antelope W-19					
Well Position	+N/-S	0.0 ft	Northing:	1,385,744.54 ft	Latitude:	40.386650
	+E/-W	0.0 ft	Easting:	3,317,832.40 ft	Longitude:	-104.359030
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,652.0 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2010	12/7/2011	8.58	67.09	53,118

<b>Design</b>	Plan #2				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN		<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	136.32	

<b>Plan Sections</b>										
<b>Measured Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical Depth</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg Rate</b>	<b>Build Rate</b>	<b>Turn Rate</b>	<b>TFO</b>	<b>Target</b>
(ft)	(°)	(°)	(ft)	(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	
925.8	9.77	136.32	924.2	-20.1	19.1	3.00	3.00	0.00	136.32	
5,850.8	9.77	136.32	5,777.8	-624.7	596.5	0.00	0.00	0.00	0.00	
6,176.6	0.00	0.00	6,102.0	-644.8	615.6	3.00	-3.00	0.00	180.00	Antelope W-19 TGT (;
6,790.6	0.00	0.00	6,716.0	-644.8	615.6	0.00	0.00	0.00	0.00	Antelope W-19 PBHL

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site:</b>	Antelope 42-19 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	3.00	136.32	700.0	-1.9	1.8	2.6	3.00	3.00	
800.0	6.00	136.32	799.6	-7.6	7.2	10.5	3.00	3.00	
900.0	9.00	136.32	898.8	-17.0	16.2	23.5	3.00	3.00	
925.8	9.77	136.32	924.2	-20.1	19.1	27.7	3.00	3.00	EOB @ Inc. = 9.77°
1,000.0	9.77	136.32	997.3	-29.2	27.8	40.3	0.00	0.00	
1,100.0	9.77	136.32	1,095.9	-41.4	39.6	57.3	0.00	0.00	
1,200.0	9.77	136.32	1,194.4	-53.7	51.3	74.3	0.00	0.00	
1,300.0	9.77	136.32	1,293.0	-66.0	63.0	91.2	0.00	0.00	
1,400.0	9.77	136.32	1,391.5	-78.3	74.7	108.2	0.00	0.00	
1,500.0	9.77	136.32	1,490.1	-90.6	86.5	125.2	0.00	0.00	
1,600.0	9.77	136.32	1,588.6	-102.8	98.2	142.2	0.00	0.00	
1,700.0	9.77	136.32	1,687.2	-115.1	109.9	159.1	0.00	0.00	
1,800.0	9.77	136.32	1,785.7	-127.4	121.6	176.1	0.00	0.00	
1,900.0	9.77	136.32	1,884.3	-139.7	133.3	193.1	0.00	0.00	
2,000.0	9.77	136.32	1,982.8	-151.9	145.1	210.1	0.00	0.00	
2,100.0	9.77	136.32	2,081.4	-164.2	156.8	227.0	0.00	0.00	
2,200.0	9.77	136.32	2,179.9	-176.5	168.5	244.0	0.00	0.00	
2,300.0	9.77	136.32	2,278.5	-188.8	180.2	261.0	0.00	0.00	
2,400.0	9.77	136.32	2,377.0	-201.1	192.0	278.0	0.00	0.00	
2,500.0	9.77	136.32	2,475.6	-213.3	203.7	295.0	0.00	0.00	
2,600.0	9.77	136.32	2,574.1	-225.6	215.4	311.9	0.00	0.00	
2,700.0	9.77	136.32	2,672.7	-237.9	227.1	328.9	0.00	0.00	
2,800.0	9.77	136.32	2,771.2	-250.2	238.9	345.9	0.00	0.00	
2,900.0	9.77	136.32	2,869.8	-262.4	250.6	362.9	0.00	0.00	
3,000.0	9.77	136.32	2,968.3	-274.7	262.3	379.8	0.00	0.00	
3,100.0	9.77	136.32	3,066.9	-287.0	274.0	396.8	0.00	0.00	
3,200.0	9.77	136.32	3,165.4	-299.3	285.7	413.8	0.00	0.00	
3,300.0	9.77	136.32	3,264.0	-311.6	297.5	430.8	0.00	0.00	
3,400.0	9.77	136.32	3,362.5	-323.8	309.2	447.7	0.00	0.00	
3,493.9	9.77	136.32	3,455.0	-335.4	320.2	463.7	0.00	0.00	Parkman
3,500.0	9.77	136.32	3,461.1	-336.1	320.9	464.7	0.00	0.00	
3,600.0	9.77	136.32	3,559.6	-348.4	332.6	481.7	0.00	0.00	
3,700.0	9.77	136.32	3,658.2	-360.7	344.4	498.7	0.00	0.00	
3,800.0	9.77	136.32	3,756.7	-372.9	356.1	515.6	0.00	0.00	
3,900.0	9.77	136.32	3,855.3	-385.2	367.8	532.6	0.00	0.00	
4,000.0	9.77	136.32	3,953.8	-397.5	379.5	549.6	0.00	0.00	
4,100.0	9.77	136.32	4,052.4	-409.8	391.3	566.6	0.00	0.00	
4,109.8	9.77	136.32	4,062.0	-411.0	392.4	568.2	0.00	0.00	Sussex
4,200.0	9.77	136.32	4,150.9	-422.1	403.0	583.5	0.00	0.00	
4,300.0	9.77	136.32	4,249.4	-434.3	414.7	600.5	0.00	0.00	
4,400.0	9.77	136.32	4,348.0	-446.6	426.4	617.5	0.00	0.00	
4,500.0	9.77	136.32	4,446.5	-458.9	438.1	634.5	0.00	0.00	
4,600.0	9.77	136.32	4,545.1	-471.2	449.9	651.4	0.00	0.00	
4,700.0	9.77	136.32	4,643.6	-483.4	461.6	668.4	0.00	0.00	
4,800.0	9.77	136.32	4,742.2	-495.7	473.3	685.4	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site:</b>	Antelope 42-19 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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
4,900.0	9.77	136.32	4,840.7	-508.0	485.0	702.4	0.00	0.00	
5,000.0	9.77	136.32	4,939.3	-520.3	496.8	719.3	0.00	0.00	
5,100.0	9.77	136.32	5,037.8	-532.6	508.5	736.3	0.00	0.00	
5,200.0	9.77	136.32	5,136.4	-544.8	520.2	753.3	0.00	0.00	
5,300.0	9.77	136.32	5,234.9	-557.1	531.9	770.3	0.00	0.00	
5,400.0	9.77	136.32	5,333.5	-569.4	543.7	787.2	0.00	0.00	
5,500.0	9.77	136.32	5,432.0	-581.7	555.4	804.2	0.00	0.00	
5,600.0	9.77	136.32	5,530.6	-593.9	567.1	821.2	0.00	0.00	
5,700.0	9.77	136.32	5,629.1	-606.2	578.8	838.2	0.00	0.00	
5,800.0	9.77	136.32	5,727.7	-618.5	590.5	855.1	0.00	0.00	
5,850.8	9.77	136.32	5,777.8	-624.7	596.5	863.8	0.00	0.00	Start 3° Drop
5,900.0	8.30	136.32	5,826.3	-630.3	601.8	871.5	3.00	-3.00	
6,000.0	5.30	136.32	5,925.6	-638.9	610.0	883.3	3.00	-3.00	
6,100.0	2.30	136.32	6,025.4	-643.7	614.6	890.0	3.00	-3.00	
6,176.6	0.00	0.00	6,102.0	-644.8	615.6	891.5	3.00	-3.00	EOD @ Inc. = 0°
6,200.0	0.00	0.00	6,125.4	-644.8	615.6	891.5	0.00	0.00	
6,300.0	0.00	0.00	6,225.4	-644.8	615.6	891.5	0.00	0.00	
6,376.6	0.00	0.00	6,302.0	-644.8	615.6	891.5	0.00	0.00	Niobrara
6,400.0	0.00	0.00	6,325.4	-644.8	615.6	891.5	0.00	0.00	
6,500.0	0.00	0.00	6,425.4	-644.8	615.6	891.5	0.00	0.00	
6,600.0	0.00	0.00	6,525.4	-644.8	615.6	891.5	0.00	0.00	
6,606.6	0.00	0.00	6,532.0	-644.8	615.6	891.5	0.00	0.00	Ft. Hayes
6,630.6	0.00	0.00	6,556.0	-644.8	615.6	891.5	0.00	0.00	Codell
6,641.6	0.00	0.00	6,567.0	-644.8	615.6	891.5	0.00	0.00	Carlile
6,678.6	0.00	0.00	6,604.0	-644.8	615.6	891.5	0.00	0.00	Greenhorn
6,700.0	0.00	0.00	6,625.4	-644.8	615.6	891.5	0.00	0.00	
6,790.6	0.00	0.00	6,716.0	-644.8	615.6	891.5	0.00	0.00	TD @ 6,790.6' 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 W-19 PBHL (2' - plan hits target center - Circle (radius 50.0))	0.00	0.00	6,716.0	-644.8	615.6	1,385,107.73	3,318,456.30	40.384880	-104.356820
Antelope W-19 TGT (2' - plan hits target center - Point)	0.00	0.00	6,102.0	-644.8	615.6	1,385,107.73	3,318,456.30	40.384880	-104.356820

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site:</b>	Antelope 42-19 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,493.9	3,455.0	Parkman				
4,109.8	4,062.0	Sussex				
6,376.6	6,302.0	Niobrara				
6,606.6	6,532.0	Ft. Hayes				
6,630.6	6,556.0	Codell				
6,641.6	6,567.0	Carlile				
6,678.6	6,604.0	Greenhorn				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
600.0	600.0	0.0	0.0	KOP @ 600'	
925.8	924.2	-20.1	19.1	EOB @ Inc. = 9.77°	
5,850.8	5,777.8	-624.7	596.5	Start 3° Drop	
6,176.6	6,102.0	-644.8	615.6	EOD @ Inc. = 0°	
6,790.6	6,716.0	-644.8	615.6	TD @ 6,790.6' MD	



# **Bonanza Creek Energy Operating Company, LLC**

**Weld County**

**Antelope 42-19 Pad**

**Antelope W-19**

**OH**

**Plan #2**

## **Anticollision Report**

**13 December, 2011**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Reference Site:</b>	Antelope 42-19 Pad	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
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	12/13/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	6,790.6	Plan #2 (OH)	MWD	Geolink MWD	

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
Antelope 42-19 Pad						
Antelope 19G - DD - DD	0.0	0.0	21.4			
Antelope 41-19 - DD - DD	0.0	0.0	47.5			
Antelope 41-19 - DD - DD	506.8	505.8	47.3	47.3	10,000.000	CC, ES
Antelope 42-19 (vert) - DD - Plan #1	0.0	0.0	33.8			
Antelope 42-19 (vert) - DD - Plan #1	600.0	599.0	33.8	33.8	10,000.000	CC, ES
Antelope P-19 - OH - Plan #2	0.0	0.0	59.9			
Antelope P-19 - OH - Plan #2	600.0	600.0	59.9	59.9	10,000.000	CC, ES
Antelope R-19 - OH - Plan #1	0.0	0.0	16.4			
Antelope R-19 - OH - Plan #1	704.4	696.9	14.2	14.2	10,000.000	CC, ES
Antelope X-19 - OH - Plan #2	0.0	0.0	29.7			
Antelope X-19 - OH - Plan #2	600.0	599.0	29.7	29.7	10,000.000	CC, ES

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Reference Site:</b>	Antelope 42-19 Pad	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Antelope 42-19 Pad - Antelope 19G - DD - DD													Offset Site Error:	0.0 ft
Survey Program: 467-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
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		
0.0	0.0	0.0	0.0	0.0	0.0	31.45	18.2	11.1	21.4					
100.0	100.0	99.0	99.0	0.2	0.2	31.50	18.3	11.2	21.5	21.5	0.00	N/A		
200.0	200.0	198.9	198.9	0.3	0.3	31.65	18.5	11.4	21.8	21.8	0.00	N/A		
300.0	300.0	298.9	298.9	0.5	0.5	31.88	19.0	11.8	22.3	22.3	0.00	N/A		
400.0	400.0	398.8	398.8	0.7	0.7	32.19	19.6	12.3	23.1	23.1	0.00	N/A		
500.0	500.0	499.0	499.0	0.9	0.9	32.32	20.2	12.8	23.9	23.9	0.00	N/A		
600.0	600.0	599.3	599.3	1.0	1.0	28.30	19.9	10.7	22.6	22.6	0.00	N/A		
629.3	629.3	628.5	628.5	1.1	1.1	-111.29	20.1	9.6	22.4	22.4	0.00	N/A		
700.0	700.0	698.7	698.5	1.2	1.2	-125.77	21.7	6.2	24.0	24.0	0.00	N/A		
800.0	799.6	796.6	796.1	1.4	1.4	-149.91	25.6	-1.0	34.3	34.3	0.00	N/A		
900.0	898.8	892.5	891.4	1.6	1.6	-161.67	32.7	-7.9	55.7	55.7	0.00	N/A		
1,000.0	997.3	985.2	983.3	1.9	1.9	-168.18	41.8	-17.0	84.9	84.9	0.00	N/A		
1,100.0	1,095.9	1,075.3	1,071.9	2.2	2.2	-171.42	53.2	-28.0	118.5	118.5	0.00	N/A		
1,200.0	1,194.4	1,164.5	1,159.1	2.5	2.5	-173.40	67.0	-41.1	155.8	155.8	0.00	N/A		
1,300.0	1,293.0	1,256.2	1,248.4	2.8	2.8	-175.27	80.7	-56.6	194.2	194.2	0.00	N/A		
1,400.0	1,391.5	1,348.6	1,338.4	3.2	3.2	-176.58	94.4	-72.5	232.8	232.8	0.00	N/A		
1,500.0	1,490.1	1,441.7	1,429.1	3.5	3.6	-177.55	108.1	-88.4	271.3	271.3	0.00	N/A		
1,600.0	1,588.6	1,535.1	1,520.3	3.8	3.9	-178.22	121.6	-103.8	309.4	309.4	0.00	N/A		
1,700.0	1,687.2	1,626.4	1,609.3	4.2	4.3	-178.88	134.3	-119.6	347.6	347.6	0.00	N/A		
1,800.0	1,785.7	1,720.2	1,700.6	4.5	4.7	-179.48	147.3	-136.2	386.0	386.0	0.00	N/A		
1,900.0	1,884.3	1,818.9	1,797.2	4.8	5.1	-179.77	160.9	-151.5	423.0	423.0	0.00	N/A		
2,000.0	1,982.8	1,906.1	1,882.5	5.2	5.4	-179.92	173.5	-164.9	460.3	460.3	0.00	N/A		
2,100.0	2,081.4	1,994.3	1,968.5	5.5	5.8	179.92	186.7	-179.1	498.5	498.5	0.00	N/A		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Reference Site:</b>	Antelope 42-19 Pad	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Antelope 42-19 Pad - Antelope 41-19 - DD - DD													Offset Site Error:	0.0 ft
Survey Program: 504-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
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		
0.0	0.0	0.0	0.0	0.0	0.0	3.37	47.4	2.8	47.5					
100.0	100.0	99.0	99.0	0.2	0.2	3.30	47.4	2.7	47.4	47.4	0.00	N/A		
200.0	200.0	199.0	199.0	0.3	0.3	3.12	47.3	2.6	47.4	47.4	0.00	N/A		
300.0	300.0	299.0	299.0	0.5	0.5	2.81	47.3	2.3	47.4	47.4	0.00	N/A		
400.0	400.0	399.0	399.0	0.7	0.7	2.37	47.3	2.0	47.4	47.4	0.00	N/A		
500.0	500.0	499.0	499.0	0.9	0.9	1.81	47.3	1.5	47.3	47.3	0.00	N/A		
506.8	506.8	505.8	505.8	0.9	0.9	1.77	47.3	1.5	47.3	47.3	0.00	N/A CC, ES		
600.0	600.0	597.5	597.5	1.0	1.0	1.89	48.7	1.6	48.7	48.7	0.00	N/A		
700.0	700.0	694.6	694.4	1.2	1.2	-136.11	54.2	1.8	56.3	56.3	0.00	N/A		
800.0	799.6	791.6	791.0	1.4	1.4	-140.65	63.2	1.2	71.5	71.5	0.00	N/A		
900.0	898.8	886.4	885.1	1.6	1.6	-144.53	74.8	1.3	93.8	93.8	0.00	N/A		
1,000.0	997.3	977.9	975.4	1.9	1.9	-147.34	89.1	2.0	122.9	122.9	0.00	N/A		
1,100.0	1,095.9	1,067.5	1,063.3	2.2	2.2	-148.81	106.6	2.9	155.7	155.7	0.00	N/A		
1,200.0	1,194.4	1,155.6	1,149.2	2.5	2.5	-149.75	126.3	3.2	191.5	191.5	0.00	N/A		
1,300.0	1,293.0	1,241.6	1,232.3	2.8	2.9	-150.20	148.2	3.5	230.2	230.2	0.00	N/A		
1,400.0	1,391.5	1,329.0	1,316.2	3.2	3.3	-150.46	172.6	3.4	271.2	271.2	0.00	N/A		
1,500.0	1,490.1	1,421.1	1,404.6	3.5	3.8	-150.69	198.6	3.2	312.5	312.5	0.00	N/A		
1,600.0	1,588.6	1,515.4	1,495.3	3.8	4.2	-150.90	224.5	2.9	353.2	353.2	0.00	N/A		
1,700.0	1,687.2	1,612.5	1,588.9	4.2	4.7	-151.17	250.2	2.4	393.0	393.0	0.00	N/A		
1,800.0	1,785.7	1,709.0	1,682.4	4.5	5.1	-151.60	273.9	0.8	431.4	431.4	0.00	N/A		
1,900.0	1,884.3	1,806.0	1,776.6	4.8	5.5	-151.84	297.4	0.3	469.1	469.1	0.00	N/A		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Reference Site:</b>	Antelope 42-19 Pad	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Antelope 42-19 Pad - Antelope 42-19 (vert) - DD - Plan #1														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	14.30	32.8	8.4	33.8						
100.0	100.0	99.0	99.0	0.2	0.2	14.30	32.8	8.4	33.8	33.8	0.00	N/A			
200.0	200.0	199.0	199.0	0.3	0.3	14.30	32.8	8.4	33.8	33.8	0.00	N/A			
300.0	300.0	299.0	299.0	0.5	0.5	14.30	32.8	8.4	33.8	33.8	0.00	N/A			
400.0	400.0	399.0	399.0	0.7	0.7	14.30	32.8	8.4	33.8	33.8	0.00	N/A			
500.0	500.0	499.0	499.0	0.9	0.9	14.30	32.8	8.4	33.8	33.8	0.00	N/A			
600.0	600.0	599.0	599.0	1.0	1.0	14.30	32.8	8.4	33.8	33.8	0.00	N/A CC, ES			
700.0	700.0	699.0	699.0	1.2	1.2	-125.59	32.8	8.4	35.3	35.3	0.00	N/A			
800.0	799.6	798.6	798.6	1.4	1.4	-134.56	32.8	8.4	40.4	40.4	0.00	N/A			
900.0	898.8	897.8	897.8	1.6	1.5	-144.99	32.8	8.4	50.4	50.4	0.00	N/A			
1,000.0	997.3	996.3	996.3	1.9	1.7	-153.45	32.8	8.4	64.9	64.9	0.00	N/A			
1,100.0	1,095.9	1,094.9	1,094.9	2.2	1.9	-158.85	32.8	8.4	80.5	80.5	0.00	N/A			
1,200.0	1,194.4	1,193.4	1,193.4	2.5	2.1	-162.48	32.8	8.4	96.6	96.6	0.00	N/A			
1,300.0	1,293.0	1,292.0	1,292.0	2.8	2.2	-165.07	32.8	8.4	112.9	112.9	0.00	N/A			
1,400.0	1,391.5	1,390.5	1,390.5	3.2	2.4	-167.01	32.8	8.4	129.4	129.4	0.00	N/A			
1,500.0	1,490.1	1,489.1	1,489.1	3.5	2.6	-168.51	32.8	8.4	146.0	146.0	0.00	N/A			
1,600.0	1,588.6	1,587.6	1,587.6	3.8	2.8	-169.70	32.8	8.4	162.7	162.7	0.00	N/A			
1,700.0	1,687.2	1,686.2	1,686.2	4.2	2.9	-170.67	32.8	8.4	179.4	179.4	0.00	N/A			
1,800.0	1,785.7	1,784.7	1,784.7	4.5	3.1	-171.47	32.8	8.4	196.2	196.2	0.00	N/A			
1,900.0	1,884.3	1,883.3	1,883.3	4.8	3.3	-172.15	32.8	8.4	213.0	213.0	0.00	N/A			
2,000.0	1,982.8	1,981.8	1,981.8	5.2	3.4	-172.72	32.8	8.4	229.8	229.8	0.00	N/A			
2,100.0	2,081.4	2,080.4	2,080.4	5.5	3.6	-173.22	32.8	8.4	246.7	246.7	0.00	N/A			
2,200.0	2,179.9	2,178.9	2,178.9	5.8	3.8	-173.66	32.8	8.4	263.5	263.5	0.00	N/A			
2,300.0	2,278.5	2,277.5	2,277.5	6.2	4.0	-174.04	32.8	8.4	280.4	280.4	0.00	N/A			
2,400.0	2,377.0	2,376.0	2,376.0	6.5	4.1	-174.38	32.8	8.4	297.3	297.3	0.00	N/A			
2,500.0	2,475.6	2,474.6	2,474.6	6.9	4.3	-174.69	32.8	8.4	314.2	314.2	0.00	N/A			
2,600.0	2,574.1	2,573.1	2,573.1	7.2	4.5	-174.96	32.8	8.4	331.1	331.1	0.00	N/A			
2,700.0	2,672.7	2,671.7	2,671.7	7.6	4.6	-175.20	32.8	8.4	348.0	348.0	0.00	N/A			
2,800.0	2,771.2	2,770.2	2,770.2	7.9	4.8	-175.43	32.8	8.4	364.9	364.9	0.00	N/A			
2,900.0	2,869.8	2,868.8	2,868.8	8.2	5.0	-175.63	32.8	8.4	381.9	381.9	0.00	N/A			
3,000.0	2,968.3	2,967.3	2,967.3	8.6	5.2	-175.81	32.8	8.4	398.8	398.8	0.00	N/A			
3,100.0	3,066.9	3,065.9	3,065.9	8.9	5.3	-175.99	32.8	8.4	415.7	415.7	0.00	N/A			
3,200.0	3,165.4	3,164.4	3,164.4	9.3	5.5	-176.14	32.8	8.4	432.7	432.7	0.00	N/A			
3,300.0	3,264.0	3,263.0	3,263.0	9.6	5.7	-176.29	32.8	8.4	449.6	449.6	0.00	N/A			
3,400.0	3,362.5	3,361.5	3,361.5	10.0	5.8	-176.42	32.8	8.4	466.6	466.6	0.00	N/A			
3,500.0	3,461.1	3,460.1	3,460.1	10.3	6.0	-176.55	32.8	8.4	483.5	483.5	0.00	N/A			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Reference Site:</b>	Antelope 42-19 Pad	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Antelope 42-19 Pad - Antelope P-19 - OH - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
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		
0.0	0.0	0.0	0.0	0.0	0.0	-13.44	58.3	-13.9	59.9					
100.0	100.0	100.0	100.0	0.2	0.2	-13.44	58.3	-13.9	59.9	59.9	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	-13.44	58.3	-13.9	59.9	59.9	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	-13.44	58.3	-13.9	59.9	59.9	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	-13.44	58.3	-13.9	59.9	59.9	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	-13.44	58.3	-13.9	59.9	59.9	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	-13.44	58.3	-13.9	59.9	59.9	0.00	N/A CC, ES		
700.0	700.0	696.7	696.7	1.2	1.2	-150.99	60.6	-14.7	64.7	64.7	0.00	N/A		
800.0	799.6	792.0	791.7	1.4	1.4	-153.73	67.5	-16.9	79.2	79.2	0.00	N/A		
900.0	898.8	884.5	883.5	1.6	1.6	-156.51	78.4	-20.4	103.4	103.4	0.00	N/A		
1,000.0	997.3	973.5	971.1	1.9	1.9	-158.74	93.0	-25.0	135.6	135.6	0.00	N/A		
1,100.0	1,095.9	1,059.5	1,055.1	2.2	2.2	-160.02	110.7	-30.6	172.4	172.4	0.00	N/A		
1,200.0	1,194.4	1,142.4	1,135.2	2.5	2.5	-160.70	131.2	-37.2	213.4	213.4	0.00	N/A		
1,300.0	1,293.0	1,222.1	1,211.2	2.8	2.9	-161.05	154.0	-44.4	258.1	258.1	0.00	N/A		
1,400.0	1,391.5	1,300.0	1,284.4	3.2	3.4	-161.19	179.1	-52.5	306.5	306.5	0.00	N/A		
1,500.0	1,490.1	1,373.8	1,352.9	3.5	3.9	-161.22	205.6	-60.9	358.1	358.1	0.00	N/A		
1,600.0	1,588.6	1,458.8	1,431.2	3.8	4.4	-161.23	236.9	-70.9	410.8	410.8	0.00	N/A		
1,700.0	1,687.2	1,543.7	1,509.5	4.2	5.0	-161.23	268.2	-80.9	463.6	463.6	0.00	N/A		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Reference Site:</b>	Antelope 42-19 Pad	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Antelope 42-19 Pad - Antelope R-19 - OH - Plan #1												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
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	
0.0	0.0	0.0	0.0	0.0	0.0	169.17	-14.6	2.8	16.4				
100.0	100.0	93.0	93.0	0.2	0.1	169.17	-14.6	2.8	14.8	14.8	0.00	N/A	
200.0	200.0	193.0	193.0	0.3	0.3	169.17	-14.6	2.8	14.8	14.8	0.00	N/A	
300.0	300.0	293.0	293.0	0.5	0.5	169.17	-14.6	2.8	14.8	14.8	0.00	N/A	
400.0	400.0	393.0	393.0	0.7	0.7	169.17	-14.6	2.8	14.8	14.8	0.00	N/A	
500.0	500.0	493.0	493.0	0.9	0.8	169.17	-14.6	2.8	14.8	14.8	0.00	N/A	
600.0	600.0	593.0	593.0	1.0	1.0	169.17	-14.6	2.8	14.8	14.8	0.00	N/A	
700.0	700.0	692.5	692.5	1.2	1.2	46.36	-16.1	1.1	14.2	14.2	0.00	N/A	
704.4	704.4	696.9	696.9	1.2	1.2	47.66	-16.2	1.0	14.2	14.2	0.00	N/A	CC, ES
800.0	799.6	791.2	790.9	1.4	1.4	83.61	-21.0	-4.3	17.8	17.8	0.00	N/A	
900.0	898.8	888.3	887.2	1.6	1.6	109.70	-29.2	-13.2	32.2	32.2	0.00	N/A	
1,000.0	997.3	985.4	983.1	1.9	1.9	120.94	-39.5	-24.5	53.8	53.8	0.00	N/A	
1,100.0	1,095.9	1,082.6	1,079.1	2.2	2.2	125.84	-49.9	-35.8	76.5	76.5	0.00	N/A	
1,200.0	1,194.4	1,179.9	1,175.1	2.5	2.4	128.50	-60.3	-47.1	99.4	99.4	0.00	N/A	
1,300.0	1,293.0	1,277.1	1,271.2	2.8	2.7	130.17	-70.6	-58.5	122.4	122.4	0.00	N/A	
1,400.0	1,391.5	1,374.4	1,367.2	3.2	3.0	131.30	-81.0	-69.8	145.6	145.6	0.00	N/A	
1,500.0	1,490.1	1,471.6	1,463.3	3.5	3.3	132.13	-91.3	-81.1	168.7	168.7	0.00	N/A	
1,600.0	1,588.6	1,568.9	1,559.3	3.8	3.6	132.75	-101.7	-92.4	191.9	191.9	0.00	N/A	
1,700.0	1,687.2	1,666.2	1,655.3	4.2	3.9	133.24	-112.1	-103.7	215.1	215.1	0.00	N/A	
1,800.0	1,785.7	1,763.4	1,751.4	4.5	4.2	133.64	-122.4	-115.0	238.3	238.3	0.00	N/A	
1,900.0	1,884.3	1,860.7	1,847.4	4.8	4.6	133.96	-132.8	-126.4	261.5	261.5	0.00	N/A	
2,000.0	1,982.8	1,957.9	1,943.5	5.2	4.9	134.23	-143.2	-137.7	284.7	284.7	0.00	N/A	
2,100.0	2,081.4	2,055.2	2,039.5	5.5	5.2	134.46	-153.5	-149.0	308.0	308.0	0.00	N/A	
2,200.0	2,179.9	2,152.5	2,135.5	5.8	5.5	134.66	-163.9	-160.3	331.2	331.2	0.00	N/A	
2,300.0	2,278.5	2,249.7	2,231.6	6.2	5.8	134.83	-174.2	-171.6	354.4	354.4	0.00	N/A	
2,400.0	2,377.0	2,347.0	2,327.6	6.5	6.1	134.99	-184.6	-183.0	377.7	377.7	0.00	N/A	
2,500.0	2,475.6	2,444.2	2,423.6	6.9	6.4	135.12	-195.0	-194.3	400.9	400.9	0.00	N/A	
2,600.0	2,574.1	2,541.5	2,519.7	7.2	6.7	135.24	-205.3	-205.6	424.2	424.2	0.00	N/A	
2,700.0	2,672.7	2,638.7	2,615.7	7.6	7.1	135.35	-215.7	-216.9	447.4	447.4	0.00	N/A	
2,800.0	2,771.2	2,736.0	2,711.8	7.9	7.4	135.44	-226.1	-228.2	470.7	470.7	0.00	N/A	
2,900.0	2,869.8	2,833.3	2,807.8	8.2	7.7	135.53	-236.4	-239.6	493.9	493.9	0.00	N/A	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Reference Site:</b>	Antelope 42-19 Pad	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Antelope 42-19 Pad - Antelope X-19 - OH - 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	169.18	-29.1	5.6	29.7					
100.0	100.0	99.0	99.0	0.2	0.2	169.18	-29.1	5.6	29.7	29.7	0.00	N/A		
200.0	200.0	199.0	199.0	0.3	0.3	169.18	-29.1	5.6	29.7	29.7	0.00	N/A		
300.0	300.0	299.0	299.0	0.5	0.5	169.18	-29.1	5.6	29.7	29.7	0.00	N/A		
400.0	400.0	399.0	399.0	0.7	0.7	169.18	-29.1	5.6	29.7	29.7	0.00	N/A		
500.0	500.0	499.0	499.0	0.9	0.9	169.18	-29.1	5.6	29.7	29.7	0.00	N/A		
600.0	600.0	599.0	599.0	1.0	1.0	169.18	-29.1	5.6	29.7	29.7	0.00	N/A CC, ES		
700.0	700.0	697.5	697.4	1.2	1.2	34.94	-31.5	6.3	30.0	30.0	0.00	N/A		
800.0	799.6	795.9	795.5	1.4	1.4	40.83	-38.7	8.6	31.3	31.3	0.00	N/A		
900.0	898.8	894.1	893.0	1.6	1.6	49.39	-50.7	12.5	34.2	34.2	0.00	N/A		
1,000.0	997.3	992.2	989.4	1.9	1.9	57.25	-67.3	17.9	40.1	40.1	0.00	N/A		
1,100.0	1,095.9	1,089.7	1,084.3	2.2	2.3	59.72	-88.6	24.7	50.5	50.5	0.00	N/A		
1,200.0	1,194.4	1,186.2	1,177.0	2.5	2.8	58.77	-114.1	32.9	65.2	65.2	0.00	N/A		
1,300.0	1,293.0	1,281.2	1,266.8	2.8	3.3	56.37	-143.6	42.4	84.1	84.1	0.00	N/A		
1,400.0	1,391.5	1,375.5	1,354.4	3.2	3.9	53.62	-176.8	53.1	107.2	107.2	0.00	N/A		
1,500.0	1,490.1	1,472.4	1,443.9	3.5	4.5	51.51	-212.1	64.5	131.6	131.6	0.00	N/A		
1,600.0	1,588.6	1,569.2	1,533.4	3.8	5.1	50.07	-247.5	75.9	156.1	156.1	0.00	N/A		
1,700.0	1,687.2	1,666.1	1,622.9	4.2	5.8	49.02	-282.8	87.2	180.6	180.6	0.00	N/A		
1,800.0	1,785.7	1,763.0	1,712.4	4.5	6.4	48.22	-318.1	98.6	205.3	205.3	0.00	N/A		
1,900.0	1,884.3	1,859.9	1,801.9	4.8	7.1	47.59	-353.4	110.0	229.9	229.9	0.00	N/A		
2,000.0	1,982.8	1,956.8	1,891.4	5.2	7.7	47.08	-388.7	121.4	254.6	254.6	0.00	N/A		
2,100.0	2,081.4	2,053.7	1,980.9	5.5	8.4	46.67	-424.1	132.7	279.3	279.3	0.00	N/A		
2,200.0	2,179.9	2,150.6	2,070.4	5.8	9.1	46.32	-459.4	144.1	304.0	304.0	0.00	N/A		
2,300.0	2,278.5	2,247.5	2,159.9	6.2	9.7	46.02	-494.7	155.5	328.7	328.7	0.00	N/A		
2,400.0	2,377.0	2,344.3	2,249.4	6.5	10.4	45.76	-530.0	166.8	353.4	353.4	0.00	N/A		
2,500.0	2,475.6	2,441.2	2,338.9	6.9	11.1	45.54	-565.3	178.2	378.1	378.1	0.00	N/A		
2,600.0	2,574.1	2,538.1	2,428.4	7.2	11.7	45.35	-600.7	189.6	402.8	402.8	0.00	N/A		
2,700.0	2,672.7	2,635.0	2,517.9	7.6	12.4	45.18	-636.0	201.0	427.6	427.6	0.00	N/A		
2,800.0	2,771.2	2,731.9	2,607.4	7.9	13.1	45.02	-671.3	212.3	452.3	452.3	0.00	N/A		
2,900.0	2,869.8	2,828.8	2,696.9	8.2	13.7	44.88	-706.6	223.7	477.0	477.0	0.00	N/A		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope W-19
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	kbe @ 4662.0ft
<b>Reference Site:</b>	Antelope 42-19 Pad	<b>MD Reference:</b>	kbe @ 4662.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope W-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to kbe @ 4662.0ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Antelope W-19  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.74°

