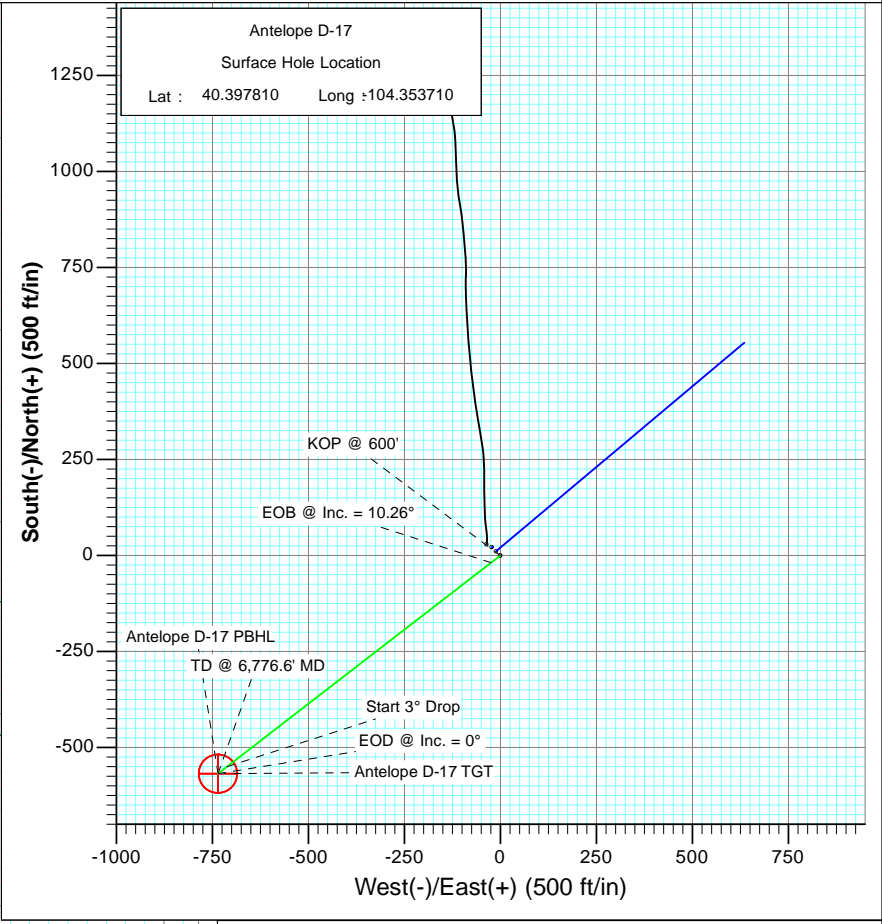
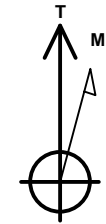


SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	942.0	10.26	232.30	940.2	-18.7	-24.2	3.00	232.30	30.5	
4	5816.6	10.26	232.30	5736.8	-549.6	-711.1	0.00	0.00	898.8	
5	6158.6	0.00	0.00	6077.0	-568.3	-735.3	3.00	180.00	929.3	Antelope D-17 TGT
6	6776.6	0.00	0.00	6695.0	-568.3	-735.3	0.00	0.00	929.3	Antelope D-17 PBHL

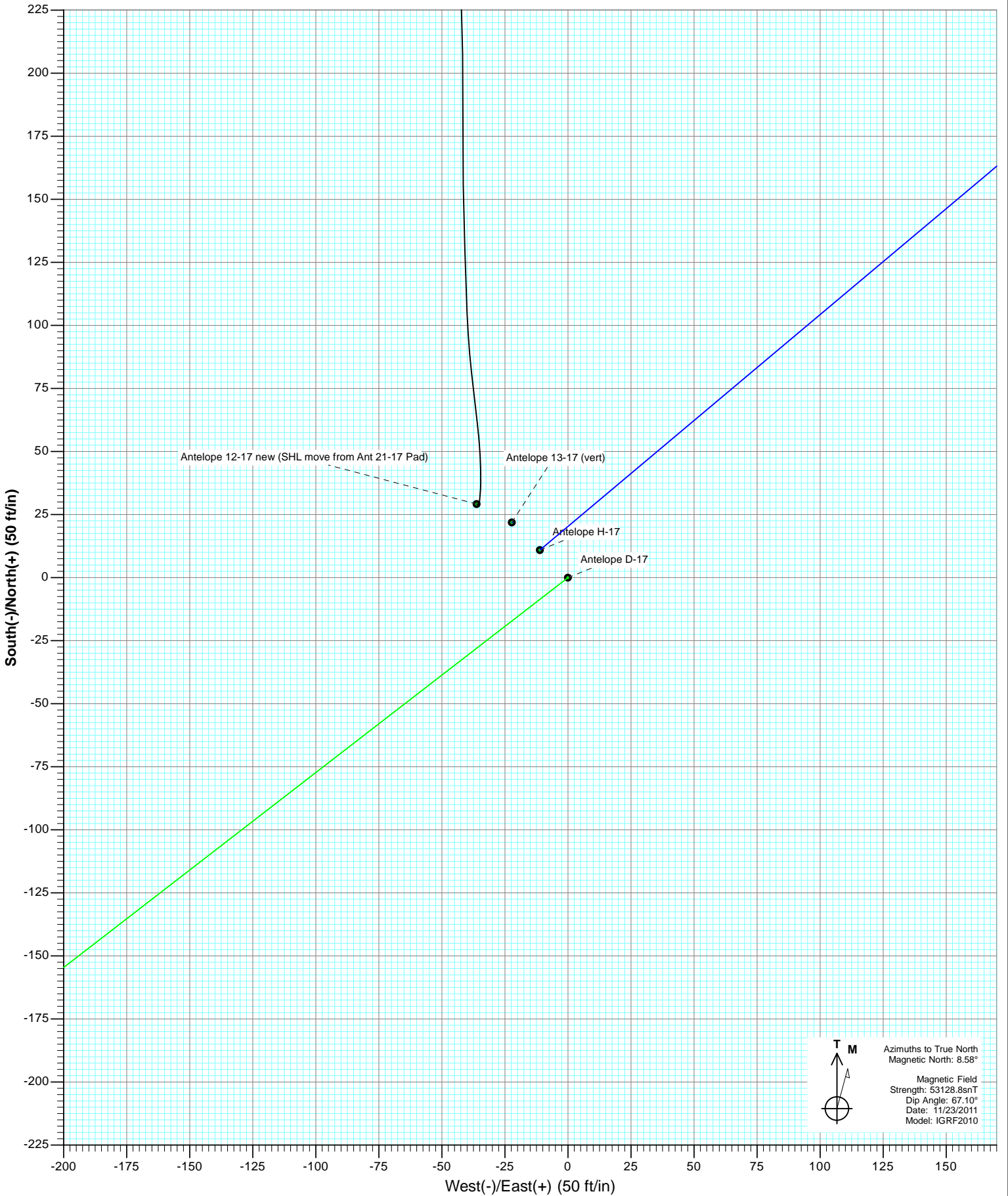


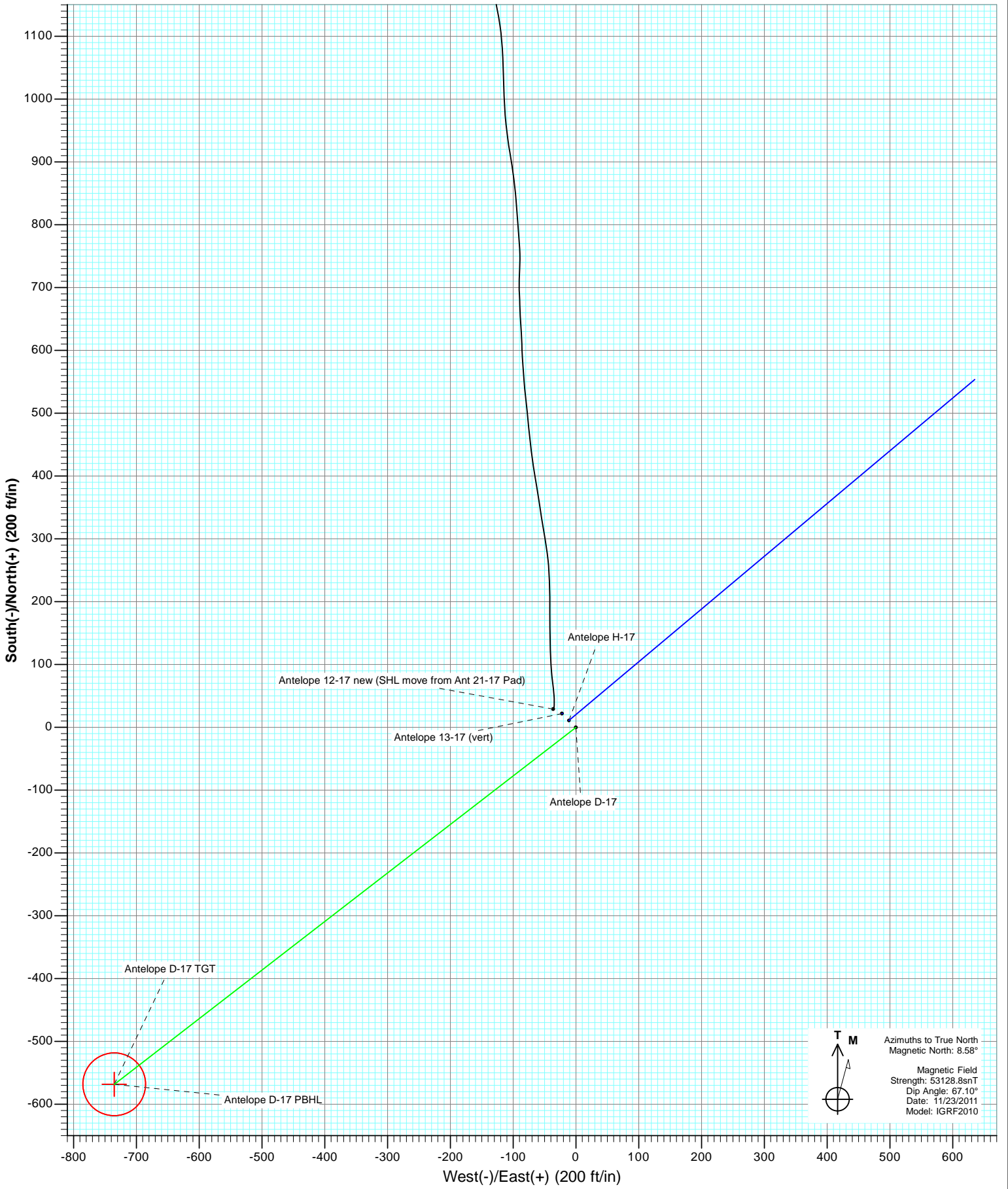
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3417.0	3459.1	Parkman
4112.0	4165.4	Sussex
6277.0	6358.6	Niobrara
6511.0	6592.6	Ft. Hayes
6535.0	6616.6	Codell
6547.0	6628.6	Carlike
6582.0	6663.6	Greenhorn

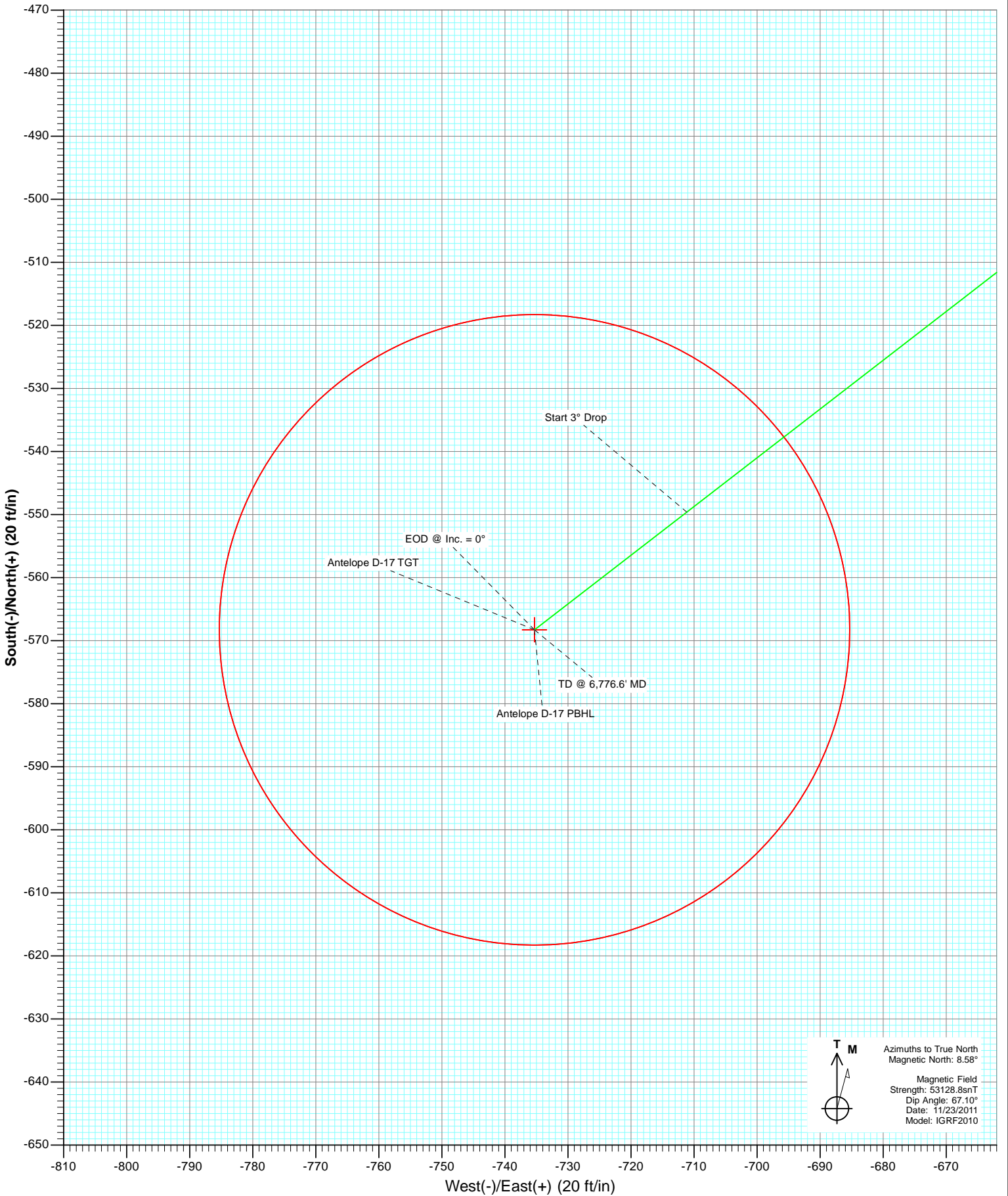


Azimuths to True North  
 Magnetic North: 8.58°  
 Magnetic Field  
 Strength: 53128.8snT  
 Dip Angle: 67.10°  
 Date: 11/23/2011  
 Model: IGRF2010

Plan #2 Antelope D-17 125XXX; SC						
KBE @ 4682.0ft (Original Well Elev) North American Datum 1983 Well Antelope D-17, True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W
TD	No Target (Freehand)	232.30	Slot		0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
Antelope D-17 TGT	6077.0	-568.3	-735.3	40.396250	-104.356350	
Antelope D-17 PBHL	6695.0	-568.3	-735.3	40.396250	-104.356350	







# Cathedral Energy Services

## Survey Report

<b>Company:</b> Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b> Well Antelope D-17
<b>Project:</b> Weld County	<b>TVD Reference:</b> KBE @ 4682.0ft (Original Well Elev)
<b>Site:</b> Antelope 13-17 Pad	<b>MD Reference:</b> KBE @ 4682.0ft (Original Well Elev)
<b>Well:</b> Antelope D-17	<b>North Reference:</b> True
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Plan #2	<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		

<b>Site</b> Antelope 13-17 Pad					
<b>Site Position:</b>		<b>Northing:</b>	1,389,850.45 ft	<b>Latitude:</b>	40.397870
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,319,239.13 ft	<b>Longitude:</b>	-104.353790
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.74 °

<b>Well</b> Antelope D-17					
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,389,828.86 ft	<b>Latitude:</b>
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,319,261.70 ft	<b>Longitude:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>
					4,672.0 ft

<b>Wellbore</b> OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/23/2011	8.58	67.10	53,129

<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	232.30

<b>Survey Tool Program</b>		<b>Date</b> 11/29/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	6,776.6	Plan #2 (OH)	MWD	Geolink MWD	

<b>Planned Survey</b>									
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
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	232.30	700.0	-1.6	-2.1	2.6	3.00	3.00	
800.0	6.00	232.30	799.6	-6.4	-8.3	10.5	3.00	3.00	
900.0	9.00	232.30	898.8	-14.4	-18.6	23.5	3.00	3.00	
942.0	10.26	232.30	940.2	-18.7	-24.2	30.5	3.00	3.00	EOB @ Inc. = 10.26°
1,000.0	10.26	232.30	997.2	-25.0	-32.3	40.9	0.00	0.00	
1,100.0	10.26	232.30	1,095.6	-35.9	-46.4	58.7	0.00	0.00	

# Cathedral Energy Services

## Survey Report

**Company:** Bonanza Creek Energy Operating Company, LLC  
**Project:** Weld County  
**Site:** Antelope 13-17 Pad  
**Well:** Antelope D-17  
**Wellbore:** OH  
**Design:** Plan #2

**Local Co-ordinate Reference:** Well Antelope D-17  
**TD Reference:** KBE @ 4682.0ft (Original Well Elev)  
**MVD Reference:** KBE @ 4682.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** USA EDM 5000 Multi Users DB

### 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)	Formations / Comments
1,200.0	10.26	232.30	1,194.0	-46.8	-60.5	76.5	0.00	0.00	
1,300.0	10.26	232.30	1,292.5	-57.7	-74.6	94.3	0.00	0.00	
1,400.0	10.26	232.30	1,390.9	-68.6	-88.7	112.1	0.00	0.00	
1,500.0	10.26	232.30	1,489.3	-79.5	-102.8	129.9	0.00	0.00	
1,600.0	10.26	232.30	1,587.7	-90.3	-116.9	147.7	0.00	0.00	
1,700.0	10.26	232.30	1,686.1	-101.2	-131.0	165.5	0.00	0.00	
1,800.0	10.26	232.30	1,784.5	-112.1	-145.1	183.4	0.00	0.00	
1,900.0	10.26	232.30	1,882.9	-123.0	-159.2	201.2	0.00	0.00	
2,000.0	10.26	232.30	1,981.3	-133.9	-173.3	219.0	0.00	0.00	
2,100.0	10.26	232.30	2,079.7	-144.8	-187.4	236.8	0.00	0.00	
2,200.0	10.26	232.30	2,178.1	-155.7	-201.5	254.6	0.00	0.00	
2,300.0	10.26	232.30	2,276.5	-166.6	-215.5	272.4	0.00	0.00	
2,400.0	10.26	232.30	2,374.9	-177.5	-229.6	290.2	0.00	0.00	
2,500.0	10.26	232.30	2,473.3	-188.4	-243.7	308.0	0.00	0.00	
2,600.0	10.26	232.30	2,571.7	-199.3	-257.8	325.9	0.00	0.00	
2,700.0	10.26	232.30	2,670.1	-210.2	-271.9	343.7	0.00	0.00	
2,800.0	10.26	232.30	2,768.5	-221.0	-286.0	361.5	0.00	0.00	
2,900.0	10.26	232.30	2,866.9	-231.9	-300.1	379.3	0.00	0.00	
3,000.0	10.26	232.30	2,965.3	-242.8	-314.2	397.1	0.00	0.00	
3,100.0	10.26	232.30	3,063.7	-253.7	-328.3	414.9	0.00	0.00	
3,200.0	10.26	232.30	3,162.1	-264.6	-342.4	432.7	0.00	0.00	
3,300.0	10.26	232.30	3,260.5	-275.5	-356.5	450.5	0.00	0.00	
3,400.0	10.26	232.30	3,358.9	-286.4	-370.6	468.3	0.00	0.00	
3,459.1	10.26	232.30	3,417.0	-292.8	-378.9	478.9	0.00	0.00	Parkman
3,500.0	10.26	232.30	3,457.3	-297.3	-384.7	486.2	0.00	0.00	
3,600.0	10.26	232.30	3,555.7	-308.2	-398.8	504.0	0.00	0.00	
3,700.0	10.26	232.30	3,654.1	-319.1	-412.9	521.8	0.00	0.00	
3,800.0	10.26	232.30	3,752.5	-330.0	-426.9	539.6	0.00	0.00	
3,900.0	10.26	232.30	3,850.9	-340.9	-441.0	557.4	0.00	0.00	
4,000.0	10.26	232.30	3,949.3	-351.7	-455.1	575.2	0.00	0.00	
4,100.0	10.26	232.30	4,047.7	-362.6	-469.2	593.0	0.00	0.00	
4,165.4	10.26	232.30	4,112.0	-369.8	-478.4	604.7	0.00	0.00	Sussex
4,200.0	10.26	232.30	4,146.1	-373.5	-483.3	610.8	0.00	0.00	
4,300.0	10.26	232.30	4,244.5	-384.4	-497.4	628.6	0.00	0.00	
4,400.0	10.26	232.30	4,342.9	-395.3	-511.5	646.5	0.00	0.00	
4,500.0	10.26	232.30	4,441.3	-406.2	-525.6	664.3	0.00	0.00	
4,600.0	10.26	232.30	4,539.7	-417.1	-539.7	682.1	0.00	0.00	
4,700.0	10.26	232.30	4,638.1	-428.0	-553.8	699.9	0.00	0.00	
4,800.0	10.26	232.30	4,736.5	-438.9	-567.9	717.7	0.00	0.00	
4,900.0	10.26	232.30	4,834.9	-449.8	-582.0	735.5	0.00	0.00	
5,000.0	10.26	232.30	4,933.3	-460.7	-596.1	753.3	0.00	0.00	
5,100.0	10.26	232.30	5,031.7	-471.6	-610.2	771.1	0.00	0.00	
5,200.0	10.26	232.30	5,130.1	-482.4	-624.2	788.9	0.00	0.00	
5,300.0	10.26	232.30	5,228.5	-493.3	-638.3	806.8	0.00	0.00	
5,400.0	10.26	232.30	5,326.9	-504.2	-652.4	824.6	0.00	0.00	
5,500.0	10.26	232.30	5,425.3	-515.1	-666.5	842.4	0.00	0.00	
5,600.0	10.26	232.30	5,523.7	-526.0	-680.6	860.2	0.00	0.00	
5,700.0	10.26	232.30	5,622.1	-536.9	-694.7	878.0	0.00	0.00	
5,800.0	10.26	232.30	5,720.5	-547.8	-708.8	895.8	0.00	0.00	
5,816.6	10.26	232.30	5,736.8	-549.6	-711.1	898.8	0.00	0.00	Start 3° Drop
5,900.0	7.76	232.30	5,819.2	-557.6	-721.5	911.8	3.00	-3.00	
6,000.0	4.76	232.30	5,918.6	-564.3	-730.1	922.7	3.00	-3.00	
6,100.0	1.76	232.30	6,018.4	-567.7	-734.6	928.4	3.00	-3.00	

# Cathedral Energy Services

## Survey Report

<b>Company:</b> Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b> Well Antelope D-17
<b>Project:</b> Weld County	<b>TVD Reference:</b> KBE @ 4682.0ft (Original Well Elev)
<b>Site:</b> Antelope 13-17 Pad	<b>MD Reference:</b> KBE @ 4682.0ft (Original Well Elev)
<b>Well:</b> Antelope D-17	<b>North Reference:</b> True
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Plan #2	<b>Database:</b> USA EDM 5000 Multi Users DB

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)	Formations / Comments
6,158.6	0.00	0.00	6,077.0	-568.3	-735.3	929.3	3.00	-3.00	EOD @ Inc. = 0°
6,200.0	0.00	0.00	6,118.4	-568.3	-735.3	929.3	0.00	0.00	
6,300.0	0.00	0.00	6,218.4	-568.3	-735.3	929.3	0.00	0.00	
6,358.6	0.00	0.00	6,277.0	-568.3	-735.3	929.3	0.00	0.00	Niobrara
6,400.0	0.00	0.00	6,318.4	-568.3	-735.3	929.3	0.00	0.00	
6,500.0	0.00	0.00	6,418.4	-568.3	-735.3	929.3	0.00	0.00	
6,592.6	0.00	0.00	6,511.0	-568.3	-735.3	929.3	0.00	0.00	Ft. Hayes
6,600.0	0.00	0.00	6,518.4	-568.3	-735.3	929.3	0.00	0.00	
6,616.6	0.00	0.00	6,535.0	-568.3	-735.3	929.3	0.00	0.00	Codell
6,628.6	0.00	0.00	6,547.0	-568.3	-735.3	929.3	0.00	0.00	Carlile
6,663.6	0.00	0.00	6,582.0	-568.3	-735.3	929.3	0.00	0.00	Greenhorn
6,700.0	0.00	0.00	6,618.4	-568.3	-735.3	929.3	0.00	0.00	
6,776.6	0.00	0.00	6,695.0	-568.3	-735.3	929.3	0.00	0.00	TD @ 6,776.6' MD

# Cathedral Energy Services

## Survey Report

<b>Company:</b> Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b> Well Antelope D-17
<b>Project:</b> Weld County	<b>TVD Reference:</b> KBE @ 4682.0ft (Original Well Elev)
<b>Site:</b> Antelope 13-17 Pad	<b>MD Reference:</b> KBE @ 4682.0ft (Original Well Elev)
<b>Well:</b> Antelope D-17	<b>North Reference:</b> True
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Plan #2	<b>Database:</b> USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Antelope D-17 PBHL - plan hits target center - Circle (radius 50.0)	0.00	0.00	6,695.0	-568.3	-735.3	1,389,251.13	3,318,533.79	40.396250	-104.356350
Antelope D-17 TGT - plan hits target center - Point	0.00	0.00	6,077.0	-568.3	-735.3	1,389,251.13	3,318,533.79	40.396250	-104.356350

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
3,459.1	3,417.0	Parkman			
4,165.4	4,112.0	Sussex			
6,358.6	6,277.0	Niobrara			
6,592.6	6,511.0	Ft. Hayes			
6,616.6	6,535.0	Codell			
6,628.6	6,547.0	Carlile			
6,663.6	6,582.0	Greenhorn			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
600.0	600.0	0.0	0.0	KOP @ 600'	
942.0	940.2	-18.7	-24.2	EOB @ Inc. = 10.26°	
5,816.6	5,736.8	-549.6	-711.1	Start 3° Drop	
6,158.6	6,077.0	-568.3	-735.3	EOD @ Inc. = 0°	
6,776.6	6,695.0	-568.3	-735.3	TD @ 6,776.6' MD	

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



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

**Weld County**

**Antelope 13-17 Pad**

**Antelope D-17**

**OH**

**Plan #2**

## **Anticollision Report**

**29 November, 2011**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope D-17
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Reference Site:</b>	Antelope 13-17 Pad	<b>MD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope D-17	<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

<b>Reference</b>	Plan #2		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	Systematic Ellipse
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 500.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	11/29/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	6,776.6	Plan #2 (OH)	MWD	Geolink MWD

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Antelope 13-17 Pad</b>						
Antelope 12-17 new (SHL move from Ant 21-17 Pad) - D	0.0	1.0	46.5			
Antelope 12-17 new (SHL move from Ant 21-17 Pad) - D	510.0	511.0	45.7	45.7	10,000.000	CC, ES
Antelope 13-17 (vert) - VH - Plan #1	0.0	1.0	31.2			
Antelope 13-17 (vert) - VH - Plan #1	727.5	728.4	30.9	30.9	10,000.000	CC, ES
Antelope H-17 - OH - Plan #1	0.0	0.0	15.6			
Antelope H-17 - OH - Plan #1	658.9	658.9	15.5	15.5	10,000.000	CC, ES
<b>Antelope 18 Pad</b>						
Antelope 18I - DD - DD						Out of range
Antelope 43-18 - DD - DD						Out of range
Antelope 44-18 - DD - DD						Out of range

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope D-17
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Reference Site:</b>	Antelope 13-17 Pad	<b>MD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope D-17	<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													Offset Site Error:	0.0 ft
Antelope 13-17 Pad - Antelope 12-17 new (SHL move from Ant 21-17 Pad) - DD - DD													Offset Well Error:	0.0 ft
Survey Program: 499-MWD														
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	1.0	1.0	0.0	0.0	-51.16	29.2	-36.2	46.5					
100.0	100.0	101.0	101.0	0.2	0.2	-51.14	29.1	-36.2	46.5	46.5	0.00	N/A		
200.0	200.0	201.1	201.1	0.3	0.3	-51.09	29.1	-36.1	46.4	46.4	0.00	N/A		
300.0	300.0	301.1	301.1	0.5	0.5	-51.00	29.1	-35.9	46.2	46.2	0.00	N/A		
400.0	400.0	401.1	401.1	0.7	0.7	-50.88	29.0	-35.7	46.0	46.0	0.00	N/A		
500.0	500.0	501.1	501.1	0.9	0.9	-50.72	28.9	-35.4	45.7	45.7	0.00	N/A		
510.0	510.0	511.0	511.0	0.9	0.9	-50.67	28.9	-35.3	45.7	45.7	0.00	N/A	CC, ES	
600.0	600.0	599.6	599.5	1.0	1.0	-48.13	31.3	-34.9	46.9	46.9	0.00	N/A		
700.0	700.0	696.6	696.2	1.2	1.2	89.03	39.4	-34.6	52.6	52.6	0.00	N/A		
800.0	799.6	791.7	790.4	1.4	1.5	102.31	52.8	-35.1	65.9	65.9	0.00	N/A		
900.0	898.8	884.3	881.3	1.6	1.8	113.41	70.1	-37.0	88.4	88.4	0.00	N/A		
1,000.0	997.2	973.7	968.3	1.9	2.1	121.64	90.6	-39.1	119.6	119.6	0.00	N/A		
1,100.0	1,095.6	1,062.5	1,053.9	2.2	2.5	127.22	114.3	-40.4	156.3	156.3	0.00	N/A		
1,200.0	1,194.0	1,155.3	1,143.1	2.6	2.9	131.02	139.6	-41.2	194.4	194.4	0.00	N/A		
1,300.0	1,292.5	1,246.4	1,230.9	2.9	3.4	133.62	163.9	-41.6	232.6	232.6	0.00	N/A		
1,400.0	1,390.9	1,334.4	1,315.4	3.2	3.8	135.50	188.8	-41.6	272.6	272.6	0.00	N/A		
1,500.0	1,489.3	1,430.7	1,407.8	3.6	4.3	136.98	215.5	-41.9	312.2	312.2	0.00	N/A		
1,600.0	1,587.7	1,524.7	1,498.5	3.9	4.7	138.06	240.4	-42.6	350.8	350.8	0.00	N/A		
1,700.0	1,686.1	1,618.6	1,588.9	4.3	5.2	138.76	265.7	-44.4	389.6	389.6	0.00	N/A		
1,800.0	1,784.5	1,717.5	1,684.6	4.6	5.6	139.18	290.6	-47.8	426.4	426.4	0.00	N/A		
1,900.0	1,882.9	1,803.3	1,767.2	4.9	6.0	139.39	313.0	-51.4	464.0	464.0	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 D-17
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Reference Site:</b>	Antelope 13-17 Pad	<b>MD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope D-17	<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													Offset Site Error:	0.0 ft
Antelope 13-17 Pad - Antelope 13-17 (vert) - VH - Plan #1													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	1.0	1.0	0.0	0.0	-45.53	21.9	-22.3	31.2					
100.0	100.0	101.0	101.0	0.2	0.2	-45.53	21.9	-22.3	31.2	31.2	0.00	N/A		
200.0	200.0	201.0	201.0	0.3	0.3	-45.53	21.9	-22.3	31.2	31.2	0.00	N/A		
300.0	300.0	301.0	301.0	0.5	0.5	-45.53	21.9	-22.3	31.2	31.2	0.00	N/A		
400.0	400.0	401.0	401.0	0.7	0.7	-45.53	21.9	-22.3	31.2	31.2	0.00	N/A		
500.0	500.0	501.0	501.0	0.9	0.9	-45.53	21.9	-22.3	31.2	31.2	0.00	N/A		
600.0	600.0	601.0	601.0	1.0	1.0	-45.53	21.9	-22.3	31.2	31.2	0.00	N/A		
700.0	700.0	701.0	701.0	1.2	1.2	86.97	21.9	-22.3	31.0	31.0	0.00	N/A		
727.5	727.4	728.4	728.4	1.3	1.3	90.00	21.9	-22.3	30.9	30.9	0.00	N/A	CC, ES	
800.0	799.6	800.6	800.6	1.4	1.4	101.28	21.9	-22.3	31.5	31.5	0.00	N/A		
900.0	898.8	899.8	899.8	1.6	1.6	121.59	21.9	-22.3	36.4	36.4	0.00	N/A		
1,000.0	997.2	998.2	998.2	1.9	1.7	139.35	21.9	-22.3	47.9	47.9	0.00	N/A		
1,100.0	1,095.6	1,096.6	1,096.6	2.2	1.9	149.99	21.9	-22.3	62.6	62.6	0.00	N/A		
1,200.0	1,194.0	1,195.0	1,195.0	2.6	2.1	156.48	21.9	-22.3	78.6	78.6	0.00	N/A		
1,300.0	1,292.5	1,293.5	1,293.5	2.9	2.2	160.76	21.9	-22.3	95.2	95.2	0.00	N/A		
1,400.0	1,390.9	1,391.9	1,391.9	3.2	2.4	163.75	21.9	-22.3	112.2	112.2	0.00	N/A		
1,500.0	1,489.3	1,490.3	1,490.3	3.6	2.6	165.96	21.9	-22.3	129.4	129.4	0.00	N/A		
1,600.0	1,587.7	1,588.7	1,588.7	3.9	2.8	167.64	21.9	-22.3	146.8	146.8	0.00	N/A		
1,700.0	1,686.1	1,687.1	1,687.1	4.3	2.9	168.97	21.9	-22.3	164.2	164.2	0.00	N/A		
1,800.0	1,784.5	1,785.5	1,785.5	4.6	3.1	170.05	21.9	-22.3	181.8	181.8	0.00	N/A		
1,900.0	1,882.9	1,883.9	1,883.9	4.9	3.3	170.93	21.9	-22.3	199.3	199.3	0.00	N/A		
2,000.0	1,981.3	1,982.3	1,982.3	5.3	3.4	171.67	21.9	-22.3	216.9	216.9	0.00	N/A		
2,100.0	2,079.7	2,080.7	2,080.7	5.7	3.6	172.30	21.9	-22.3	234.6	234.6	0.00	N/A		
2,200.0	2,178.1	2,179.1	2,179.1	6.0	3.8	172.84	21.9	-22.3	252.3	252.3	0.00	N/A		
2,300.0	2,276.5	2,277.5	2,277.5	6.4	4.0	173.31	21.9	-22.3	269.9	269.9	0.00	N/A		
2,400.0	2,374.9	2,375.9	2,375.9	6.7	4.1	173.73	21.9	-22.3	287.6	287.6	0.00	N/A		
2,500.0	2,473.3	2,474.3	2,474.3	7.1	4.3	174.09	21.9	-22.3	305.4	305.4	0.00	N/A		
2,600.0	2,571.7	2,572.7	2,572.7	7.4	4.5	174.42	21.9	-22.3	323.1	323.1	0.00	N/A		
2,700.0	2,670.1	2,671.1	2,671.1	7.8	4.6	174.71	21.9	-22.3	340.8	340.8	0.00	N/A		
2,800.0	2,768.5	2,769.5	2,769.5	8.1	4.8	174.97	21.9	-22.3	358.6	358.6	0.00	N/A		
2,900.0	2,866.9	2,867.9	2,867.9	8.5	5.0	175.21	21.9	-22.3	376.3	376.3	0.00	N/A		
3,000.0	2,965.3	2,966.3	2,966.3	8.8	5.2	175.43	21.9	-22.3	394.1	394.1	0.00	N/A		
3,100.0	3,063.7	3,064.7	3,064.7	9.2	5.3	175.62	21.9	-22.3	411.8	411.8	0.00	N/A		
3,200.0	3,162.1	3,163.1	3,163.1	9.6	5.5	175.80	21.9	-22.3	429.6	429.6	0.00	N/A		
3,300.0	3,260.5	3,261.5	3,261.5	9.9	5.7	175.97	21.9	-22.3	447.3	447.3	0.00	N/A		
3,400.0	3,358.9	3,359.9	3,359.9	10.3	5.8	176.13	21.9	-22.3	465.1	465.1	0.00	N/A		
3,500.0	3,457.3	3,458.3	3,458.3	10.6	6.0	176.27	21.9	-22.3	482.9	482.9	0.00	N/A		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope D-17
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Reference Site:</b>	Antelope 13-17 Pad	<b>MD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope D-17	<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													Offset Site Error:	0.0 ft
Antelope 13-17 Pad - Antelope H-17 - OH - Plan #1													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	-45.55	10.9	-11.1	15.6					
100.0	100.0	100.0	100.0	0.2	0.2	-45.55	10.9	-11.1	15.6	15.6	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	-45.55	10.9	-11.1	15.6	15.6	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	-45.55	10.9	-11.1	15.6	15.6	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	-45.55	10.9	-11.1	15.6	15.6	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	-45.55	10.9	-11.1	15.6	15.6	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	-45.55	10.9	-11.1	15.6	15.6	0.00	N/A		
658.9	658.9	658.9	658.9	1.1	1.1	88.83	11.5	-10.4	15.5	15.5	0.00	N/A CC, ES		
700.0	700.0	699.8	699.8	1.2	1.2	101.18	12.6	-9.1	15.9	15.9	0.00	N/A		
800.0	799.6	798.0	797.6	1.4	1.4	139.00	17.5	-3.3	24.5	24.5	0.00	N/A		
900.0	898.8	893.0	891.9	1.6	1.6	158.79	25.4	6.0	47.3	47.3	0.00	N/A		
1,000.0	997.2	987.1	984.7	1.9	1.9	166.86	35.1	17.6	79.1	79.1	0.00	N/A		
1,100.0	1,095.6	1,081.3	1,077.7	2.2	2.2	170.41	44.8	29.2	112.0	112.0	0.00	N/A		
1,200.0	1,194.0	1,175.6	1,170.8	2.6	2.4	172.35	54.6	40.8	145.2	145.2	0.00	N/A		
1,300.0	1,292.5	1,269.8	1,263.8	2.9	2.7	173.57	64.3	52.4	178.5	178.5	0.00	N/A		
1,400.0	1,390.9	1,364.1	1,356.8	3.2	3.0	174.41	74.1	64.0	211.8	211.8	0.00	N/A		
1,500.0	1,489.3	1,458.3	1,449.8	3.6	3.3	175.01	83.8	75.7	245.1	245.1	0.00	N/A		
1,600.0	1,587.7	1,552.6	1,542.9	3.9	3.6	175.48	93.6	87.3	278.4	278.4	0.00	N/A		
1,700.0	1,686.1	1,646.9	1,635.9	4.3	3.9	175.84	103.4	98.9	311.8	311.8	0.00	N/A		
1,800.0	1,784.5	1,741.1	1,728.9	4.6	4.2	176.13	113.1	110.5	345.2	345.2	0.00	N/A		
1,900.0	1,882.9	1,835.4	1,821.9	4.9	4.5	176.38	122.9	122.1	378.6	378.6	0.00	N/A		
2,000.0	1,981.3	1,929.6	1,915.0	5.3	4.8	176.58	132.6	133.7	411.9	411.9	0.00	N/A		
2,100.0	2,079.7	2,023.9	2,008.0	5.7	5.1	176.75	142.4	145.4	445.3	445.3	0.00	N/A		
2,200.0	2,178.1	2,118.1	2,101.0	6.0	5.4	176.90	152.2	157.0	478.7	478.7	0.00	N/A		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope D-17
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Reference Site:</b>	Antelope 13-17 Pad	<b>MD Reference:</b>	KBE @ 4682.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Antelope D-17	<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 @ 4682.0ft (Original Well Elev)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: Antelope D-17  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.74°

