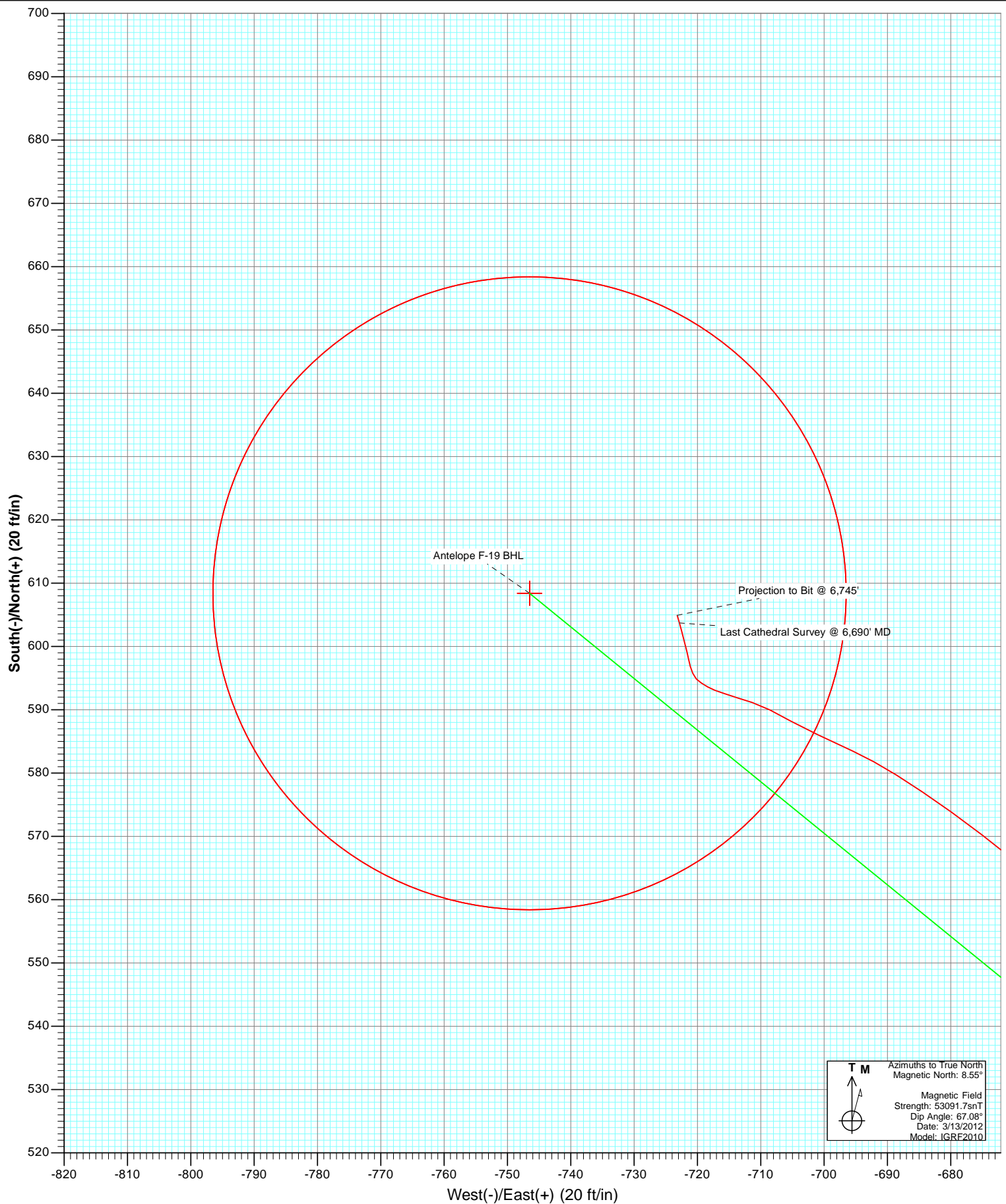


OH Antelope F-19 125208/149355; SC							
KBE @ 4610.0ft (Forte #5) North American Datum 1983 Well Antelope F-19, True North							
Type Target	Target	Antelope F-19 BHL	Azimuth 309.18	Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Name		TVD	+N/-S	+E/-W		Latitude	Longitude
Antelope F-19 TGT		6040.0	608.4	-746.5		40.391790	-104.370570
Antelope F-19 BHL		6655.0	608.4	-746.5		40.391790	-104.370570



Project: Weld County
Site: Antelope 21-19 Pad
Well: Antelope F-19
Wellbore: OH
Plan: AB FINAL



Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope F-19
Project:	Weld County	TVD Reference:	KBE @ 4610.0ft (Forte #5)
Site:	Antelope 21-19 Pad	MD Reference:	KBE @ 4610.0ft (Forte #5)
Well:	Antelope F-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	USA EDM 5000 Multi Users DB

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 21-19 Pad			
Site Position:		Northing:	1,386,991.60 ft	Latitude:	40.390160
From:	Lat/Long	Easting:	3,315,356.54 ft	Longitude:	-104.367860
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.73 °

Well	Antelope F-19					
Well Position	+N/-S	0.0 ft	Northing:	1,386,976.90 ft	Latitude:	40.390120
	+E/-W	0.0 ft	Easting:	3,315,348.38 ft	Longitude:	-104.367890
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,600.0 ft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/13/2012	8.55	67.08	53,092

Design	OH			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	309.18

Survey Program		Date	3/20/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
501.0	6,745.0	Survey #1 (OH)	MWD	Geolink MWD	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
501.0	0.20	227.70	501.0	-0.6	-0.6	0.1	0.04	0.04	
596.0	2.10	308.70	596.0	0.4	-2.1	1.9	2.19	2.00	
691.0	4.00	313.20	690.8	3.7	-5.9	6.9	2.01	2.00	
786.0	6.10	318.80	785.5	9.8	-11.6	15.2	2.27	2.21	
880.0	8.00	321.90	878.8	18.7	-19.0	26.5	2.06	2.02	
973.0	10.20	317.90	970.6	29.9	-28.5	41.0	2.46	2.37	
1,069.0	11.80	315.00	1,064.8	43.2	-41.1	59.2	1.76	1.67	
1,163.0	12.00	308.10	1,156.8	56.0	-55.6	78.5	1.53	0.21	
1,257.0	12.80	303.50	1,248.6	67.8	-72.0	98.6	1.35	0.85	
1,351.0	12.50	303.50	1,340.3	79.1	-89.2	119.1	0.32	-0.32	
1,446.0	13.80	304.90	1,432.8	91.3	-107.0	140.6	1.41	1.37	
1,542.0	12.90	303.90	1,526.2	103.8	-125.3	162.7	0.97	-0.94	

Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope F-19
Project:	Weld County	TVD Reference:	KBE @ 4610.0ft (Forte #5)
Site:	Antelope 21-19 Pad	MD Reference:	KBE @ 4610.0ft (Forte #5)
Well:	Antelope F-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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
1,637.0	12.20	303.40	1,619.0	115.3	-142.5	183.3	0.75	-0.74	
1,732.0	12.90	307.10	1,711.7	127.2	-159.3	203.9	1.12	0.74	
1,826.0	13.40	307.90	1,803.2	140.2	-176.3	225.2	0.57	0.53	
1,920.0	12.00	306.10	1,894.9	152.7	-192.8	245.9	1.55	-1.49	
2,015.0	13.10	309.80	1,987.7	165.4	-209.0	266.5	1.43	1.16	
2,111.0	13.40	311.30	2,081.1	179.7	-225.7	288.5	0.48	0.31	
2,205.0	12.10	312.60	2,172.8	193.5	-241.2	309.2	1.42	-1.38	
2,300.0	12.80	314.10	2,265.5	207.6	-256.1	329.6	0.81	0.74	
2,395.0	13.40	311.90	2,358.1	222.3	-271.8	351.1	0.82	0.63	
2,489.0	13.40	306.00	2,449.5	235.9	-288.7	372.9	1.45	0.00	
2,583.0	12.30	306.90	2,541.2	248.4	-305.6	393.8	1.19	-1.17	
2,677.0	13.20	310.30	2,632.8	261.3	-321.8	414.5	1.25	0.96	
2,771.0	14.20	313.80	2,724.2	276.2	-338.3	436.7	1.38	1.06	
2,865.0	13.40	314.30	2,815.5	291.8	-354.4	459.1	0.86	-0.85	
2,959.0	13.90	311.40	2,906.8	306.9	-370.6	481.2	0.90	0.53	
3,054.0	12.70	310.40	2,999.3	321.2	-387.2	503.0	1.29	-1.26	
3,148.0	12.60	308.20	3,091.0	334.2	-403.1	523.6	0.52	-0.11	
3,244.0	12.40	314.10	3,184.7	347.9	-418.7	544.4	1.35	-0.21	
3,337.0	12.80	305.40	3,275.5	360.8	-434.3	564.6	2.08	0.43	
3,431.0	11.60	305.40	3,367.3	372.3	-450.5	584.4	1.28	-1.28	
3,526.0	11.30	313.70	3,460.5	384.3	-465.0	603.2	1.76	-0.32	
3,621.0	12.90	315.70	3,553.3	398.3	-479.1	623.0	1.74	1.68	
3,715.0	13.10	315.80	3,644.9	413.5	-493.9	644.0	0.21	0.21	
3,810.0	13.00	317.50	3,737.5	429.0	-508.6	665.3	0.42	-0.11	
3,904.0	13.90	315.60	3,828.9	444.9	-523.6	687.0	1.07	0.96	
3,999.0	12.60	314.00	3,921.4	460.3	-539.1	708.7	1.42	-1.37	
4,093.0	12.00	312.70	4,013.2	474.0	-553.6	728.6	0.70	-0.64	
4,188.0	11.90	311.10	4,106.2	487.1	-568.3	748.3	0.36	-0.11	
4,282.0	12.60	310.70	4,198.0	500.2	-583.4	768.2	0.75	0.74	
4,376.0	13.10	305.40	4,289.7	513.1	-599.8	789.1	1.36	0.53	
4,470.0	12.00	309.30	4,381.4	525.4	-616.1	809.5	1.48	-1.17	
4,565.0	11.60	305.30	4,474.4	537.2	-631.5	828.9	0.96	-0.42	
4,660.0	10.30	306.60	4,567.7	547.8	-646.1	846.9	1.39	-1.37	
4,754.0	9.10	307.60	4,660.3	557.3	-658.7	862.7	1.29	-1.28	
4,848.0	8.40	309.20	4,753.2	566.2	-670.0	877.0	0.79	-0.74	
4,942.0	7.00	305.60	4,846.4	573.9	-679.9	889.6	1.57	-1.49	
5,038.0	5.40	301.90	4,941.8	579.7	-688.5	899.9	1.72	-1.67	
5,132.0	4.20	294.90	5,035.5	583.5	-695.4	907.7	1.42	-1.28	
5,227.0	3.30	295.20	5,130.3	586.1	-701.0	913.7	0.95	-0.95	
5,321.0	2.50	299.10	5,224.2	588.2	-705.3	918.3	0.88	-0.85	
5,416.0	2.00	296.80	5,319.1	590.0	-708.6	922.0	0.53	-0.53	
5,510.0	1.70	287.50	5,413.1	591.1	-711.4	924.9	0.45	-0.32	
5,604.0	1.40	288.00	5,507.0	591.9	-713.8	927.3	0.32	-0.32	
5,700.0	1.10	288.60	5,603.0	592.6	-715.8	929.2	0.31	-0.31	
5,794.0	0.80	289.50	5,697.0	593.1	-717.2	930.7	0.32	-0.32	
5,888.0	0.70	301.10	5,791.0	593.6	-718.4	931.9	0.19	-0.11	
5,983.0	0.70	302.40	5,886.0	594.2	-719.3	933.0	0.02	0.00	
6,077.0	0.60	316.60	5,980.0	594.9	-720.2	934.1	0.20	-0.11	
6,173.0	0.70	337.10	6,076.0	595.8	-720.7	935.1	0.26	0.10	
6,266.0	0.70	344.14	6,168.9	596.9	-721.1	936.0	0.09	0.00	
6,361.0	0.70	348.70	6,263.9	598.0	-721.4	937.0	0.06	0.00	
6,456.0	0.80	346.10	6,358.9	599.2	-721.7	937.9	0.11	0.11	
6,645.0	1.40	345.40	6,547.9	602.7	-722.6	940.9	0.32	0.32	

Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope F-19
Project:	Weld County	TVD Reference:	KBE @ 4610.0ft (Forte #5)
Site:	Antelope 21-19 Pad	MD Reference:	KBE @ 4610.0ft (Forte #5)
Well:	Antelope F-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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
6,690.0	1.30	343.90	6,592.9	603.7	-722.8	941.7	0.24	-0.22	Last Cathedral Survey @ 6,690' MD Projection to Bit @ 6,745'
6,745.0	1.30	343.90	6,647.9	604.9	-723.2	942.8	0.00	0.00	

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Antelope F-19 BHL - actual wellpath misses target center by 24.6ft at 6745.0ft MD (6647.9 TVD, 604.9 N, -723.2 E) - Circle (radius 50.0)	0.00	0.00	6,655.0	608.4	-746.5	1,387,575.73	3,314,594.17	40.391790	-104.370570
Antelope F-19 TGT - actual wellpath misses target center by 29.0ft at 6137.3ft MD (6040.3 TVD, 595.4 N, -720.6 E) - Point	0.00	0.00	6,040.0	608.4	-746.5	1,387,575.73	3,314,594.17	40.391790	-104.370570

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,690.0	6,592.9	603.7	-722.8	Last Cathedral Survey @ 6,690' MD
6,745.0	6,647.9	604.9	-723.2	Projection to Bit @ 6,745'

Checked By: _____ Approved By: _____ Date: _____