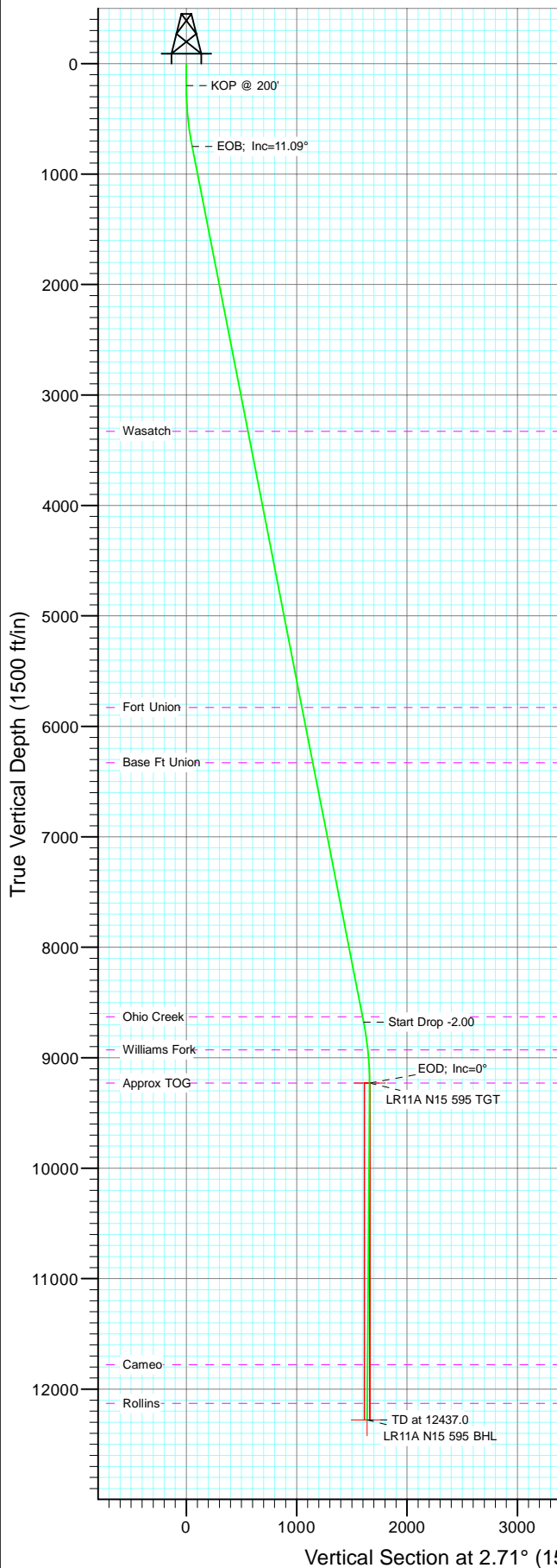
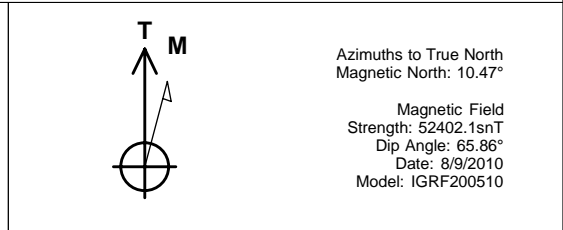
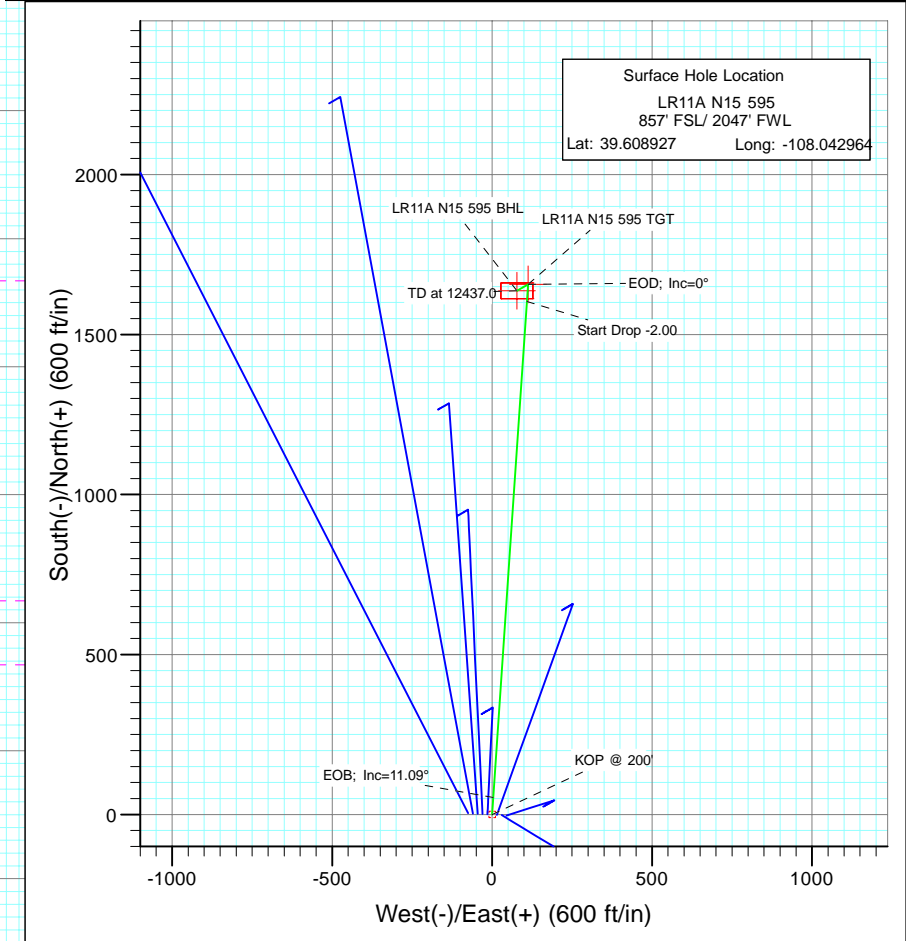




Project: Garfield County
Site: N15 595 Pad
Well: LR11A N15 595
Wellbore: DD
Design: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	754.4	11.09	3.87	750.9	53.3	3.6	2.00	3.87	53.5	
4	8832.3	11.09	3.87	8678.1	1603.3	108.5	0.00	0.00	1606.6	
5	9386.7	0.00	0.00	9229.0	1656.6	112.2	2.00	180.00	1660.1	LR11A N15 595 TGT
6	9704.0	0.79	240.02	9546.3	1655.5	110.2	0.25	240.02	1658.9	
7	12437.0	0.79	240.02	12279.0	1636.6	77.5	0.00	0.00	1638.4	LR11A N15 595 BHL



Azimuths to True North
Magnetic North: 10.47°

Magnetic Field
Strength: 52402.1snT
Dip Angle: 65.86°
Date: 8/9/2010
Model: IGRF200510

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3329.0	3381.5	Wasatch
5829.0	5929.0	Fort Union
6329.0	6438.6	Base Ft Union
8629.0	8782.3	Ohio Creek
8929.0	9086.1	Williams Fork
9229.0	9386.7	Approx TOG
11779.0	11936.9	Cameo
12129.0	12286.9	Rollins

DESIGN DETAILS: Plan #1				
105XXX; BH				
KBE @ 8391.0ft (Patterson 302)				
Target	Azimuth	Origin	N/S	E/WFrom TVD
LR11A N15 595 BHL	2.71	Slot	0.0	0.0 0.0



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users Db	Local Co-ordinate Reference:	Well LR11A N15 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site:	N15 595 Pad	North Reference:	True
Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	Garfield County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	N15 595 Pad			
Site Position:		Northing:	1,656,704.15 ft	Latitude: 39.608919
From:	Lat/Long	Easting:	2,283,744.91 ft	Longitude: -108.042534
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.60 °

Well	LR11A N15 595			
Well Position	+N/-S	0.0 ft	Northing:	1,656,708.32 ft
	+E/-W	0.0 ft	Easting:	2,283,699.93 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	8,376.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/9/2010	10.47	65.86	52,402

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	2.71

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
754.4	11.09	3.87	750.9	53.3	3.6	2.00	2.00	0.00	3.87	
8,832.3	11.09	3.87	8,678.1	1,603.3	108.5	0.00	0.00	0.00	0.00	
9,386.7	0.00	0.00	9,229.0	1,656.6	112.2	2.00	-2.00	0.00	180.00	LR11A N15 595 TGT
9,704.0	0.79	240.02	9,546.3	1,655.5	110.2	0.25	0.25	-37.82	240.02	
12,437.0	0.79	240.02	12,279.0	1,636.6	77.5	0.00	0.00	0.00	0.00	LR11A N15 595 BHL



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users Db	Local Co-ordinate Reference:	Well LR11A N15 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site:	N15 595 Pad	North Reference:	True
Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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	
30.0	0.00	0.00	30.0	0.0	0.0	0.0	0.00	0.00	
60.0	0.00	0.00	60.0	0.0	0.0	0.0	0.00	0.00	
90.0	0.00	0.00	90.0	0.0	0.0	0.0	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	
180.0	0.00	0.00	180.0	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	KOP @ 200'
210.0	0.20	3.87	210.0	0.0	0.0	0.0	2.00	2.00	
240.0	0.80	3.87	240.0	0.3	0.0	0.3	2.00	2.00	
270.0	1.40	3.87	270.0	0.9	0.1	0.9	2.00	2.00	
300.0	2.00	3.87	300.0	1.7	0.1	1.7	2.00	2.00	
330.0	2.60	3.87	330.0	2.9	0.2	2.9	2.00	2.00	
360.0	3.20	3.87	359.9	4.5	0.3	4.5	2.00	2.00	
390.0	3.80	3.87	389.9	6.3	0.4	6.3	2.00	2.00	
420.0	4.40	3.87	419.8	8.4	0.6	8.4	2.00	2.00	
450.0	5.00	3.87	449.7	10.9	0.7	10.9	2.00	2.00	
480.0	5.60	3.87	479.6	13.6	0.9	13.7	2.00	2.00	
510.0	6.20	3.87	509.4	16.7	1.1	16.8	2.00	2.00	
540.0	6.80	3.87	539.2	20.1	1.4	20.1	2.00	2.00	
570.0	7.40	3.87	569.0	23.8	1.6	23.9	2.00	2.00	
600.0	8.00	3.87	598.7	27.8	1.9	27.9	2.00	2.00	
630.0	8.60	3.87	628.4	32.1	2.2	32.2	2.00	2.00	
660.0	9.20	3.87	658.0	36.8	2.5	36.8	2.00	2.00	
690.0	9.80	3.87	687.6	41.7	2.8	41.8	2.00	2.00	
720.0	10.40	3.87	717.1	47.0	3.2	47.1	2.00	2.00	
750.0	11.00	3.87	746.6	52.5	3.6	52.6	2.00	2.00	
754.4	11.09	3.87	750.9	53.3	3.6	53.5	2.00	2.00	EOB; Inc=11.09°
780.0	11.09	3.87	776.1	58.3	3.9	58.4	0.00	0.00	
810.0	11.09	3.87	805.5	64.0	4.3	64.2	0.00	0.00	
840.0	11.09	3.87	834.9	69.8	4.7	69.9	0.00	0.00	
870.0	11.09	3.87	864.4	75.5	5.1	75.7	0.00	0.00	
900.0	11.09	3.87	893.8	81.3	5.5	81.5	0.00	0.00	
930.0	11.09	3.87	923.3	87.0	5.9	87.2	0.00	0.00	
960.0	11.09	3.87	952.7	92.8	6.3	93.0	0.00	0.00	
990.0	11.09	3.87	982.1	98.6	6.7	98.8	0.00	0.00	
1,020.0	11.09	3.87	1,011.6	104.3	7.1	104.5	0.00	0.00	
1,050.0	11.09	3.87	1,041.0	110.1	7.5	110.3	0.00	0.00	
1,080.0	11.09	3.87	1,070.5	115.8	7.8	116.1	0.00	0.00	
1,110.0	11.09	3.87	1,099.9	121.6	8.2	121.8	0.00	0.00	
1,140.0	11.09	3.87	1,129.3	127.3	8.6	127.6	0.00	0.00	
1,170.0	11.09	3.87	1,158.8	133.1	9.0	133.4	0.00	0.00	
1,200.0	11.09	3.87	1,188.2	138.9	9.4	139.1	0.00	0.00	
1,230.0	11.09	3.87	1,217.7	144.6	9.8	144.9	0.00	0.00	
1,260.0	11.09	3.87	1,247.1	150.4	10.2	150.7	0.00	0.00	
1,290.0	11.09	3.87	1,276.5	156.1	10.6	156.4	0.00	0.00	
1,320.0	11.09	3.87	1,306.0	161.9	11.0	162.2	0.00	0.00	
1,350.0	11.09	3.87	1,335.4	167.6	11.3	168.0	0.00	0.00	
1,380.0	11.09	3.87	1,364.9	173.4	11.7	173.7	0.00	0.00	
1,410.0	11.09	3.87	1,394.3	179.1	12.1	179.5	0.00	0.00	
1,440.0	11.09	3.87	1,423.7	184.9	12.5	185.3	0.00	0.00	
1,470.0	11.09	3.87	1,453.2	190.7	12.9	191.1	0.00	0.00	



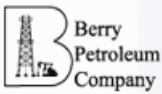
Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users Db	Local Co-ordinate Reference:	Well LR11A N15 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site:	N15 595 Pad	North Reference:	True
Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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
1,500.0	11.09	3.87	1,482.6	196.4	13.3	196.8	0.00	0.00	
1,530.0	11.09	3.87	1,512.1	202.2	13.7	202.6	0.00	0.00	
1,560.0	11.09	3.87	1,541.5	207.9	14.1	208.4	0.00	0.00	
1,590.0	11.09	3.87	1,570.9	213.7	14.5	214.1	0.00	0.00	
1,620.0	11.09	3.87	1,600.4	219.4	14.9	219.9	0.00	0.00	
1,650.0	11.09	3.87	1,629.8	225.2	15.2	225.7	0.00	0.00	
1,680.0	11.09	3.87	1,659.3	230.9	15.6	231.4	0.00	0.00	
1,710.0	11.09	3.87	1,688.7	236.7	16.0	237.2	0.00	0.00	
1,740.0	11.09	3.87	1,718.1	242.5	16.4	243.0	0.00	0.00	
1,770.0	11.09	3.87	1,747.6	248.2	16.8	248.7	0.00	0.00	
1,800.0	11.09	3.87	1,777.0	254.0	17.2	254.5	0.00	0.00	
1,830.0	11.09	3.87	1,806.5	259.7	17.6	260.3	0.00	0.00	
1,860.0	11.09	3.87	1,835.9	265.5	18.0	266.0	0.00	0.00	
1,890.0	11.09	3.87	1,865.3	271.2	18.4	271.8	0.00	0.00	
1,920.0	11.09	3.87	1,894.8	277.0	18.8	277.6	0.00	0.00	
1,950.0	11.09	3.87	1,924.2	282.8	19.1	283.3	0.00	0.00	
1,980.0	11.09	3.87	1,953.7	288.5	19.5	289.1	0.00	0.00	
2,010.0	11.09	3.87	1,983.1	294.3	19.9	294.9	0.00	0.00	
2,040.0	11.09	3.87	2,012.5	300.0	20.3	300.6	0.00	0.00	
2,070.0	11.09	3.87	2,042.0	305.8	20.7	306.4	0.00	0.00	
2,100.0	11.09	3.87	2,071.4	311.5	21.1	312.2	0.00	0.00	
2,130.0	11.09	3.87	2,100.9	317.3	21.5	317.9	0.00	0.00	
2,160.0	11.09	3.87	2,130.3	323.0	21.9	323.7	0.00	0.00	
2,190.0	11.09	3.87	2,159.8	328.8	22.3	329.5	0.00	0.00	
2,220.0	11.09	3.87	2,189.2	334.6	22.6	335.3	0.00	0.00	
2,250.0	11.09	3.87	2,218.6	340.3	23.0	341.0	0.00	0.00	
2,280.0	11.09	3.87	2,248.1	346.1	23.4	346.8	0.00	0.00	
2,310.0	11.09	3.87	2,277.5	351.8	23.8	352.6	0.00	0.00	
2,340.0	11.09	3.87	2,307.0	357.6	24.2	358.3	0.00	0.00	
2,370.0	11.09	3.87	2,336.4	363.3	24.6	364.1	0.00	0.00	
2,400.0	11.09	3.87	2,365.8	369.1	25.0	369.9	0.00	0.00	
2,430.0	11.09	3.87	2,395.3	374.8	25.4	375.6	0.00	0.00	
2,460.0	11.09	3.87	2,424.7	380.6	25.8	381.4	0.00	0.00	
2,490.0	11.09	3.87	2,454.2	386.4	26.2	387.2	0.00	0.00	

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
LR11A N15 595 BHL	0.00	0.00	12,279.0	1,636.6	77.5	1,658,342.11	2,283,823.18	39.613420	-108.042419
- hit/miss target									
- Shape									
- plan misses target center by 9904.2ft at 2490.0ft MD (2454.2 TVD, 386.4 N, 26.2 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									
LR11A N15 595 TGT	0.00	0.00	9,229.0	1,656.6	112.2	1,658,361.13	2,283,858.40	39.613475	-108.042296
- hit/miss target									
- Shape									
- plan misses target center by 6893.4ft at 2490.0ft MD (2454.2 TVD, 386.4 N, 26.2 E)									
- Point									



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users Db	Local Co-ordinate Reference:	Well LR11A N15 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site:	N15 595 Pad	North Reference:	True
Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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
2,500.0	11.09	3.87	2,464.0	388.3	26.3	389.1	0.00	0.00	
2,600.0	11.09	3.87	2,562.1	407.5	27.6	408.3	0.00	0.00	
2,700.0	11.09	3.87	2,660.2	426.7	28.9	427.5	0.00	0.00	
2,800.0	11.09	3.87	2,758.4	445.8	30.2	446.8	0.00	0.00	
2,900.0	11.09	3.87	2,856.5	465.0	31.5	466.0	0.00	0.00	
3,000.0	11.09	3.87	2,954.6	484.2	32.8	485.2	0.00	0.00	
3,100.0	11.09	3.87	3,052.8	503.4	34.1	504.4	0.00	0.00	
3,200.0	11.09	3.87	3,150.9	522.6	35.4	523.7	0.00	0.00	
3,300.0	11.09	3.87	3,249.0	541.8	36.7	542.9	0.00	0.00	
3,381.5	11.09	3.87	3,329.0	557.4	37.7	558.6	0.00	0.00	Wasatch
3,400.0	11.09	3.87	3,347.2	561.0	38.0	562.1	0.00	0.00	
3,500.0	11.09	3.87	3,445.3	580.1	39.3	581.4	0.00	0.00	
3,600.0	11.09	3.87	3,543.4	599.3	40.6	600.6	0.00	0.00	
3,700.0	11.09	3.87	3,641.6	618.5	41.9	619.8	0.00	0.00	
3,800.0	11.09	3.87	3,739.7	637.7	43.2	639.0	0.00	0.00	
3,900.0	11.09	3.87	3,837.8	656.9	44.5	658.3	0.00	0.00	
4,000.0	11.09	3.87	3,936.0	676.1	45.8	677.5	0.00	0.00	
4,100.0	11.09	3.87	4,034.1	695.3	47.1	696.7	0.00	0.00	
4,200.0	11.09	3.87	4,132.2	714.5	48.4	715.9	0.00	0.00	
4,300.0	11.09	3.87	4,230.4	733.6	49.7	735.2	0.00	0.00	
4,400.0	11.09	3.87	4,328.5	752.8	51.0	754.4	0.00	0.00	
4,500.0	11.09	3.87	4,426.6	772.0	52.3	773.6	0.00	0.00	
4,600.0	11.09	3.87	4,524.8	791.2	53.6	792.9	0.00	0.00	
4,700.0	11.09	3.87	4,622.9	810.4	54.9	812.1	0.00	0.00	
4,800.0	11.09	3.87	4,721.0	829.6	56.2	831.3	0.00	0.00	
4,900.0	11.09	3.87	4,819.2	848.8	57.5	850.5	0.00	0.00	
5,000.0	11.09	3.87	4,917.3	868.0	58.8	869.8	0.00	0.00	
5,100.0	11.09	3.87	5,015.4	887.1	60.1	889.0	0.00	0.00	
5,200.0	11.09	3.87	5,113.6	906.3	61.4	908.2	0.00	0.00	
5,300.0	11.09	3.87	5,211.7	925.5	62.7	927.4	0.00	0.00	
5,400.0	11.09	3.87	5,309.8	944.7	64.0	946.7	0.00	0.00	
5,500.0	11.09	3.87	5,408.0	963.9	65.3	965.9	0.00	0.00	
5,600.0	11.09	3.87	5,506.1	983.1	66.6	985.1	0.00	0.00	
5,700.0	11.09	3.87	5,604.2	1,002.3	67.9	1,004.3	0.00	0.00	
5,800.0	11.09	3.87	5,702.4	1,021.4	69.2	1,023.6	0.00	0.00	
5,900.0	11.09	3.87	5,800.5	1,040.6	70.4	1,042.8	0.00	0.00	
5,929.0	11.09	3.87	5,829.0	1,046.2	70.8	1,048.4	0.00	0.00	Fort Union
6,000.0	11.09	3.87	5,898.6	1,059.8	71.7	1,062.0	0.00	0.00	
6,100.0	11.09	3.87	5,996.8	1,079.0	73.0	1,081.3	0.00	0.00	
6,200.0	11.09	3.87	6,094.9	1,098.2	74.3	1,100.5	0.00	0.00	
6,300.0	11.09	3.87	6,193.0	1,117.4	75.6	1,119.7	0.00	0.00	
6,400.0	11.09	3.87	6,291.2	1,136.6	76.9	1,138.9	0.00	0.00	
6,438.6	11.09	3.87	6,329.0	1,144.0	77.4	1,146.3	0.00	0.00	Base Ft Union
6,500.0	11.09	3.87	6,389.3	1,155.8	78.2	1,158.2	0.00	0.00	
6,600.0	11.09	3.87	6,487.4	1,174.9	79.5	1,177.4	0.00	0.00	
6,700.0	11.09	3.87	6,585.6	1,194.1	80.8	1,196.6	0.00	0.00	
6,800.0	11.09	3.87	6,683.7	1,213.3	82.1	1,215.8	0.00	0.00	
6,900.0	11.09	3.87	6,781.8	1,232.5	83.4	1,235.1	0.00	0.00	
7,000.0	11.09	3.87	6,880.0	1,251.7	84.7	1,254.3	0.00	0.00	
7,100.0	11.09	3.87	6,978.1	1,270.9	86.0	1,273.5	0.00	0.00	
7,200.0	11.09	3.87	7,076.2	1,290.1	87.3	1,292.7	0.00	0.00	
7,300.0	11.09	3.87	7,174.4	1,309.2	88.6	1,312.0	0.00	0.00	



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users Db	Local Co-ordinate Reference:	Well LR11A N15 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site:	N15 595 Pad	North Reference:	True
Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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
7,400.0	11.09	3.87	7,272.5	1,328.4	89.9	1,331.2	0.00	0.00	
7,500.0	11.09	3.87	7,370.6	1,347.6	91.2	1,350.4	0.00	0.00	
7,600.0	11.09	3.87	7,468.8	1,366.8	92.5	1,369.7	0.00	0.00	
7,700.0	11.09	3.87	7,566.9	1,386.0	93.8	1,388.9	0.00	0.00	
7,800.0	11.09	3.87	7,665.0	1,405.2	95.1	1,408.1	0.00	0.00	
7,900.0	11.09	3.87	7,763.2	1,424.4	96.4	1,427.3	0.00	0.00	
8,000.0	11.09	3.87	7,861.3	1,443.6	97.7	1,446.6	0.00	0.00	
8,100.0	11.09	3.87	7,959.4	1,462.7	99.0	1,465.8	0.00	0.00	
8,200.0	11.09	3.87	8,057.6	1,481.9	100.3	1,485.0	0.00	0.00	
8,300.0	11.09	3.87	8,155.7	1,501.1	101.6	1,504.2	0.00	0.00	
8,400.0	11.09	3.87	8,253.8	1,520.3	102.9	1,523.5	0.00	0.00	
8,500.0	11.09	3.87	8,352.0	1,539.5	104.2	1,542.7	0.00	0.00	
8,600.0	11.09	3.87	8,450.1	1,558.7	105.5	1,561.9	0.00	0.00	
8,700.0	11.09	3.87	8,548.2	1,577.9	106.8	1,581.1	0.00	0.00	
8,782.3	11.09	3.87	8,629.0	1,593.7	107.9	1,597.0	0.00	0.00	Ohio Creek
8,800.0	11.09	3.87	8,646.4	1,597.1	108.1	1,600.4	0.00	0.00	
8,832.3	11.09	3.87	8,678.1	1,603.3	108.5	1,606.6	0.00	0.00	Start Drop -2.00
8,900.0	9.73	3.87	8,744.7	1,615.5	109.4	1,618.8	2.00	-2.00	
9,000.0	7.73	3.87	8,843.5	1,630.6	110.4	1,634.0	2.00	-2.00	
9,086.1	6.01	3.87	8,929.0	1,640.9	111.1	1,644.3	2.00	-2.00	Williams Fork
9,100.0	5.73	3.87	8,942.8	1,642.3	111.2	1,645.7	2.00	-2.00	
9,200.0	3.73	3.87	9,042.4	1,650.5	111.7	1,654.0	2.00	-2.00	
9,300.0	1.73	3.87	9,142.3	1,655.3	112.1	1,658.7	2.00	-2.00	
9,386.7	0.00	0.00	9,229.0	1,656.6	112.2	1,660.1	2.00	-2.00	EOD; Inc=0° - Approx TOG - LR11A N15 595 T
9,400.0	0.03	240.02	9,242.3	1,656.6	112.1	1,660.0	0.25	0.25	
9,500.0	0.28	240.02	9,342.3	1,656.5	111.9	1,659.9	0.25	0.25	
9,600.0	0.53	240.02	9,442.3	1,656.1	111.3	1,659.5	0.25	0.25	
9,700.0	0.78	240.02	9,542.3	1,655.5	110.3	1,658.9	0.25	0.25	
9,704.0	0.79	240.02	9,546.3	1,655.5	110.2	1,658.9	0.25	0.25	
9,800.0	0.79	240.02	9,642.3	1,654.8	109.1	1,658.1	0.00	0.00	
9,900.0	0.79	240.02	9,742.3	1,654.1	107.9	1,657.4	0.00	0.00	
10,000.0	0.79	240.02	9,842.3	1,653.5	106.7	1,656.7	0.00	0.00	
10,100.0	0.79	240.02	9,942.3	1,652.8	105.5	1,655.9	0.00	0.00	
10,200.0	0.79	240.02	10,042.3	1,652.1	104.3	1,655.2	0.00	0.00	
10,300.0	0.79	240.02	10,142.2	1,651.4	103.1	1,654.4	0.00	0.00	
10,400.0	0.79	240.02	10,242.2	1,650.7	101.9	1,653.7	0.00	0.00	
10,500.0	0.79	240.02	10,342.2	1,650.0	100.7	1,652.9	0.00	0.00	
10,600.0	0.79	240.02	10,442.2	1,649.3	99.5	1,652.2	0.00	0.00	
10,700.0	0.79	240.02	10,542.2	1,648.6	98.3	1,651.4	0.00	0.00	
10,800.0	0.79	240.02	10,642.2	1,647.9	97.1	1,650.7	0.00	0.00	
10,900.0	0.79	240.02	10,742.2	1,647.2	95.9	1,649.9	0.00	0.00	
11,000.0	0.79	240.02	10,842.2	1,646.5	94.7	1,649.2	0.00	0.00	
11,100.0	0.79	240.02	10,942.2	1,645.8	93.5	1,648.4	0.00	0.00	
11,200.0	0.79	240.02	11,042.2	1,645.2	92.3	1,647.7	0.00	0.00	
11,300.0	0.79	240.02	11,142.2	1,644.5	91.1	1,646.9	0.00	0.00	
11,400.0	0.79	240.02	11,242.1	1,643.8	89.9	1,646.2	0.00	0.00	
11,500.0	0.79	240.02	11,342.1	1,643.1	88.7	1,645.4	0.00	0.00	
11,600.0	0.79	240.02	11,442.1	1,642.4	87.5	1,644.7	0.00	0.00	
11,700.0	0.79	240.02	11,542.1	1,641.7	86.3	1,643.9	0.00	0.00	
11,800.0	0.79	240.02	11,642.1	1,641.0	85.1	1,643.2	0.00	0.00	
11,900.0	0.79	240.02	11,742.1	1,640.3	83.9	1,642.4	0.00	0.00	
11,936.9	0.79	240.02	11,779.0	1,640.1	83.5	1,642.2	0.00	0.00	Cameo



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users Db	Local Co-ordinate Reference:	Well LR11A N15 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site:	N15 595 Pad	North Reference:	True
Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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
12,000.0	0.79	240.02	11,842.1	1,639.6	82.7	1,641.7	0.00	0.00	
12,100.0	0.79	240.02	11,942.1	1,638.9	81.5	1,641.0	0.00	0.00	
12,200.0	0.79	240.02	12,042.1	1,638.2	80.3	1,640.2	0.00	0.00	
12,286.9	0.79	240.02	12,129.0	1,637.6	79.3	1,639.6	0.00	0.00	Rollins
12,300.0	0.79	240.02	12,142.1	1,637.5	79.1	1,639.5	0.00	0.00	
12,400.0	0.79	240.02	12,242.0	1,636.9	77.9	1,638.7	0.00	0.00	
12,437.0	0.79	240.02	12,279.0	1,636.6	77.5	1,638.4	0.00	0.00	LR11A N15 595 BHL

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									
LR11A N15 595 BHL	0.00	0.00	12,279.0	1,636.6	77.5	1,658,342.11	2,283,823.18	39.613420	-108.042419
- plan hits target center									
- Rectangle (sides W50.0 H100.0 D0.0)									
LR11A N15 595 TGT	0.00	0.00	9,229.0	1,656.6	112.2	1,658,361.13	2,283,858.40	39.613475	-108.042296
- plan hits target center									
- Point									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,381.5	3,329.0	Wasatch		0.00	
5,929.0	5,829.0	Fort Union		0.00	
6,438.6	6,329.0	Base Ft Union		0.00	
8,782.3	8,629.0	Ohio Creek		0.00	
9,086.1	8,929.0	Williams Fork		0.00	
9,386.7	9,229.0	Approx TOG		0.00	
11,936.9	11,779.0	Cameo		0.00	
12,286.9	12,129.0	Rollins		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
754.4	750.9	53.3	3.6	EOB; Inc=11.09°
8,832.3	8,678.1	1,603.3	108.5	Start Drop -2.00
9,386.7	9,229.0	1,656.6	112.2	EOD; Inc=0°
12,437.0	12,279.0	1,636.6	77.5	TD at 12437.0

Berry Petroleum Company (NAD 83)

Garfield County

N15 595 Pad

LR11A N15 595

DD

Plan #1

Anticollision Report

10 August, 2010

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 100.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	8/10/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,437.0	Plan #1 (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						
N15 595 Pad						
LR05D N15 595 - DD - Plan #1	200.0	200.0	75.1	74.4	116.221	CC, ES
LR05D N15 595 - DD - Plan #1	700.0	692.5	97.4	94.5	33.301	SF
LR06B N15 595 - DD - Plan #1	200.0	200.0	60.1	59.4	93.041	CC, ES
LR06B N15 595 - DD - Plan #1	1,100.0	1,094.6	94.8	88.9	15.825	SF
LR11B N15 595 - DD - Plan #1	200.0	200.0	45.1	44.5	69.889	CC
LR11B N15 595 - DD - Plan #1	300.0	299.8	45.4	44.4	45.286	ES
LR11B N15 595 - DD - Plan #1	1,900.0	1,897.3	96.4	84.9	8.415	SF
LR11C N15 595 - DD - Plan #1	200.0	200.0	29.9	29.3	46.302	CC
LR11C N15 595 - DD - Plan #1	300.0	300.0	30.0	29.0	30.030	ES
LR11C N15 595 - DD - Plan #1	2,200.0	2,203.7	98.3	88.0	9.609	SF
LR11D N15 595 - DD - Plan #1	200.0	200.0	15.0	14.3	23.186	CC
LR11D N15 595 - DD - Plan #1	300.0	300.0	15.1	14.1	15.107	ES
LR11D N15 595 - DD - Plan #1	400.0	399.8	16.6	15.2	12.142	SF
LR14A N15 595 - DD - Plan #1	200.0	200.0	14.7	14.0	22.715	CC
LR14A N15 595 - DD - Plan #1	300.0	300.0	14.8	13.8	14.827	ES
LR14A N15 595 - DD - Plan #1	400.0	399.8	16.4	15.0	12.001	SF
LR14B N15 595 - DD - Plan #1	233.0	233.0	45.2	44.4	59.264	CC
LR14B N15 595 - DD - Plan #1	300.0	300.0	45.2	44.2	45.270	ES
LR14B N15 595 - DD - Plan #1	600.0	598.7	53.0	50.9	24.521	SF
LR15C N15 595 - DD - Plan #1	200.0	200.0	29.9	29.3	46.333	CC, ES
LR15C N15 595 - DD - Plan #1	400.0	397.5	37.4	36.0	27.424	SF

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design N15 595 Pad - LR05D N15 595 - 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	-86.94	4.0	-74.9	75.1				
100.0	100.0	100.0	100.0	0.1	0.1	-86.94	4.0	-74.9	75.1	74.8	0.30	252.951	
200.0	200.0	200.0	200.0	0.3	0.3	-86.94	4.0	-74.9	75.1	74.4	0.65	116.221	CC, ES
300.0	300.0	298.7	298.7	0.5	0.5	-90.99	5.5	-75.7	75.9	74.9	1.00	76.017	
400.0	399.8	397.3	397.2	0.7	0.7	-91.48	10.1	-78.0	78.6	77.2	1.38	56.897	
500.0	499.5	495.9	495.4	0.9	0.9	-92.23	17.6	-81.9	83.1	81.3	1.82	45.704	
600.0	598.7	594.3	593.0	1.2	1.2	-93.14	28.1	-87.3	89.4	87.0	2.33	38.388	
700.0	697.5	692.5	690.1	1.5	1.5	-94.12	41.6	-94.2	97.4	94.5	2.93	33.301	SF

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design N15 595 Pad - LR06B N15 595 - 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						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	-87.22	2.9	-60.0	60.1					
100.0	100.0	100.0	100.0	0.1	0.1	-87.22	2.9	-60.0	60.1	59.8	0.30	202.500		
200.0	200.0	200.0	200.0	0.3	0.3	-87.22	2.9	-60.0	60.1	59.4	0.65	93.041	CC, ES	
300.0	300.0	299.5	299.5	0.5	0.5	-91.14	4.6	-60.3	60.5	59.5	1.00	60.441		
400.0	399.8	399.0	398.9	0.7	0.7	-91.26	9.7	-61.3	61.8	60.4	1.39	44.483		
500.0	499.5	498.5	498.0	0.9	0.9	-91.45	18.2	-62.8	64.0	62.1	1.84	34.827		
600.0	598.7	598.0	596.7	1.2	1.2	-91.70	30.1	-65.0	67.0	64.6	2.36	28.340		
700.0	697.5	697.4	694.9	1.5	1.5	-91.99	45.3	-67.9	70.9	67.9	2.99	23.739		
754.4	750.9	751.4	748.0	1.7	1.7	-92.15	54.9	-69.6	73.3	70.0	3.37	21.778		
800.0	795.7	796.7	792.4	1.9	1.9	-92.06	63.8	-71.3	75.6	71.9	3.69	20.476		
900.0	893.8	895.9	889.1	2.2	2.3	-90.15	85.6	-75.3	81.1	76.6	4.45	18.217		
1,000.0	992.0	995.0	984.9	2.6	2.7	-86.39	110.6	-79.9	87.6	82.4	5.23	16.752		
1,100.0	1,090.1	1,094.6	1,080.8	2.9	3.2	-82.59	136.6	-84.8	94.8	88.9	5.99	15.825	SF	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design N15 595 Pad - LR11B N15 595 - 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					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	-87.22	2.2	-45.1	45.1					
100.0	100.0	100.0	100.0	0.1	0.1	-87.22	2.2	-45.1	45.1	44.8	0.30	152.112		
200.0	200.0	200.0	200.0	0.3	0.3	-87.22	2.2	-45.1	45.1	44.5	0.65	69.889 CC		
300.0	300.0	299.8	299.8	0.5	0.5	-91.11	3.9	-45.2	45.4	44.4	1.00	45.286 ES		
400.0	399.8	399.6	399.5	0.7	0.7	-91.15	9.1	-45.6	46.1	44.7	1.39	33.118		
500.0	499.5	499.4	498.9	0.9	0.9	-91.22	17.8	-46.2	47.3	45.4	1.84	25.675		
600.0	598.7	599.2	597.9	1.2	1.2	-91.31	29.9	-47.0	48.9	46.6	2.37	20.631		
700.0	697.5	699.0	696.5	1.5	1.5	-91.41	45.4	-48.1	51.1	48.1	3.00	17.032		
754.4	750.9	753.3	749.8	1.7	1.7	-91.46	55.3	-48.8	52.4	49.1	3.39	15.491		
800.0	795.7	798.8	794.4	1.9	1.9	-91.15	64.4	-49.4	53.7	50.0	3.71	14.461		
900.0	893.8	898.5	891.7	2.2	2.3	-88.17	86.5	-51.0	56.8	52.3	4.47	12.707		
1,000.0	992.0	998.4	988.8	2.6	2.7	-84.75	109.5	-52.6	60.1	54.9	5.22	11.521		
1,100.0	1,090.1	1,098.3	1,086.0	2.9	3.1	-81.70	132.5	-54.2	63.7	57.7	5.96	10.683		
1,200.0	1,188.2	1,198.2	1,183.2	3.3	3.5	-78.99	155.4	-55.8	67.4	60.7	6.69	10.074		
1,300.0	1,286.4	1,298.0	1,280.4	3.7	4.0	-76.56	178.4	-57.4	71.3	63.9	7.41	9.621		
1,400.0	1,384.5	1,397.9	1,377.6	4.1	4.4	-74.38	201.4	-59.0	75.3	67.2	8.11	9.278		
1,500.0	1,482.6	1,497.8	1,474.8	4.4	4.8	-72.43	224.3	-60.6	79.4	70.6	8.81	9.013		
1,600.0	1,580.8	1,597.7	1,572.0	4.8	5.3	-70.67	247.3	-62.2	83.5	74.0	9.48	8.808		
1,700.0	1,678.9	1,697.6	1,669.2	5.2	5.7	-69.08	270.3	-63.8	87.8	77.6	10.15	8.646		
1,800.0	1,777.0	1,797.5	1,766.4	5.6	6.1	-67.63	293.2	-65.4	92.1	81.2	10.81	8.517		
1,900.0	1,875.2	1,897.3	1,863.6	5.9	6.6	-66.32	316.2	-67.0	96.4	84.9	11.46	8.415 SF		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design N15 595 Pad - LR11C N15 595 - 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				Total	Separation	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)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-87.21	1.5	-29.9	29.9					
100.0	100.0	100.0	100.0	0.1	0.1	-87.21	1.5	-29.9	29.9	29.6	0.30	100.776		
200.0	200.0	200.0	200.0	0.3	0.3	-87.21	1.5	-29.9	29.9	29.3	0.65	46.302 CC		
206.0	206.0	206.0	206.0	0.3	0.3	-91.09	1.5	-29.9	29.9	29.2	0.67	44.824		
300.0	300.0	300.0	300.0	0.5	0.5	-94.41	1.5	-29.9	30.0	29.0	1.00	30.030 ES		
400.0	399.8	399.8	399.8	0.7	0.7	-104.13	1.5	-29.9	30.8	29.5	1.37	22.563		
500.0	499.5	499.5	499.5	0.9	0.8	-118.41	1.5	-29.9	34.0	32.3	1.75	19.447		
600.0	598.7	599.5	599.5	1.2	1.0	-131.45	3.2	-29.9	40.3	38.1	2.14	18.851		
700.0	697.5	700.0	699.8	1.5	1.2	-140.32	8.4	-30.2	48.3	45.7	2.52	19.123		
754.4	750.9	754.7	754.4	1.7	1.3	-143.82	12.8	-30.4	53.1	50.3	2.74	19.395		
800.0	795.7	800.8	800.2	1.9	1.4	-146.07	17.2	-30.6	57.0	54.1	2.92	19.546		
900.0	893.8	902.2	900.9	2.2	1.7	-148.65	29.6	-31.2	63.8	60.5	3.33	19.144		
1,000.0	992.0	1,004.0	1,001.4	2.6	2.0	-148.94	45.6	-32.0	67.8	64.0	3.79	17.901		
1,100.0	1,090.1	1,104.0	1,099.9	2.9	2.3	-148.23	63.3	-32.8	70.3	66.1	4.28	16.451		
1,200.0	1,188.2	1,204.0	1,198.3	3.3	2.6	-147.57	81.0	-33.7	72.8	68.1	4.78	15.253		
1,300.0	1,286.4	1,304.0	1,296.6	3.7	2.9	-146.95	98.6	-34.5	75.3	70.1	5.29	14.251		
1,400.0	1,384.5	1,403.9	1,395.0	4.1	3.2	-146.37	116.3	-35.3	77.9	72.1	5.81	13.404		
1,500.0	1,482.6	1,503.9	1,493.4	4.4	3.6	-145.82	134.0	-36.2	80.4	74.1	6.34	12.681		
1,600.0	1,580.8	1,603.9	1,591.8	4.8	3.9	-145.31	151.6	-37.0	82.9	76.1	6.88	12.057		
1,700.0	1,678.9	1,703.8	1,690.2	5.2	4.3	-144.83	169.3	-37.9	85.5	78.1	7.42	11.514		
1,800.0	1,777.0	1,803.8	1,788.6	5.6	4.6	-144.38	187.0	-38.7	88.0	80.0	7.97	11.038		
1,900.0	1,875.2	1,903.8	1,887.0	5.9	5.0	-143.95	204.6	-39.6	90.6	82.0	8.53	10.617		
2,000.0	1,973.3	2,003.7	1,985.4	6.3	5.3	-143.55	222.3	-40.4	93.1	84.0	9.09	10.243		
2,100.0	2,071.4	2,103.7	2,083.7	6.7	5.7	-143.16	240.0	-41.2	95.7	86.0	9.66	9.909		
2,200.0	2,169.6	2,203.7	2,182.1	7.1	6.0	-142.80	257.6	-42.1	98.3	88.0	10.23	9.609 SF		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design N15 595 Pad - LR11D N15 595 - 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							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	94.19	-1.1	14.9	15.0					
100.0	100.0	100.0	100.0	0.1	0.1	94.19	-1.1	14.9	15.0	14.7	0.30	50.463		
200.0	200.0	200.0	200.0	0.3	0.3	94.19	-1.1	14.9	15.0	14.3	0.65	23.186 CC		
224.4	224.4	224.4	224.4	0.4	0.4	90.71	-1.1	14.9	15.0	14.2	0.73	20.463		
300.0	300.0	300.0	300.0	0.5	0.5	96.95	-1.1	14.9	15.1	14.1	1.00	15.107 ES		
400.0	399.8	399.8	399.8	0.7	0.7	115.19	-1.1	14.9	16.6	15.2	1.36	12.142 SF		
500.0	499.5	499.5	499.5	0.9	0.8	136.34	-1.1	14.9	21.7	20.0	1.73	12.598		
600.0	598.7	599.5	599.4	1.2	1.0	149.43	0.5	15.5	30.5	28.4	2.08	14.662		
700.0	697.5	699.8	699.6	1.5	1.2	155.31	5.5	17.3	40.6	38.2	2.44	16.638		
754.4	750.9	754.5	754.1	1.7	1.3	156.97	9.5	18.8	46.5	43.8	2.65	17.565		
800.0	795.7	800.5	799.9	1.9	1.4	157.73	13.7	20.3	51.2	48.3	2.82	18.128		
900.0	893.8	901.7	900.3	2.2	1.7	157.49	25.4	24.5	59.4	56.2	3.24	18.355		
1,000.0	992.0	1,003.2	1,000.6	2.6	2.0	155.34	40.4	29.9	65.0	61.2	3.71	17.518		
1,100.0	1,090.1	1,103.2	1,099.0	2.9	2.3	152.42	57.1	35.9	69.1	64.8	4.23	16.333		
1,200.0	1,188.2	1,203.0	1,197.3	3.3	2.6	149.84	73.7	41.9	73.3	68.6	4.78	15.333		
1,300.0	1,286.4	1,302.9	1,295.6	3.7	2.9	147.55	90.4	47.9	77.7	72.4	5.37	14.489		
1,400.0	1,384.5	1,402.8	1,393.8	4.1	3.2	145.50	107.1	53.9	82.3	76.3	5.97	13.778		
1,500.0	1,482.6	1,502.6	1,492.1	4.4	3.6	143.67	123.7	59.9	86.9	80.3	6.59	13.175		
1,600.0	1,580.8	1,602.5	1,590.4	4.8	3.9	142.02	140.4	65.9	91.6	84.3	7.23	12.661		
1,700.0	1,678.9	1,702.3	1,688.7	5.2	4.3	140.54	157.0	71.9	96.3	88.4	7.88	12.221		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design N15 595 Pad - LR14A N15 595 - 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					Separation Factor	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			
0.0	0.0	0.0	0.0	0.0	0.0	-87.15	0.7	-14.7	14.7					
100.0	100.0	100.0	100.0	0.1	0.1	-87.15	0.7	-14.7	14.7	14.4	0.30	49.439		
200.0	200.0	200.0	200.0	0.3	0.3	-87.15	0.7	-14.7	14.7	14.0	0.65	22.715 CC		
217.3	217.3	217.3	217.3	0.4	0.4	-91.23	0.7	-14.7	14.7	14.0	0.71	20.758		
300.0	300.0	300.0	300.0	0.5	0.5	-97.79	0.7	-14.7	14.8	13.8	1.00	14.827 ES		
400.0	399.8	399.8	399.8	0.7	0.7	-116.22	0.7	-14.7	16.4	15.0	1.36	12.001 SF		
500.0	499.5	499.5	499.5	0.9	0.8	-137.25	0.7	-14.7	21.7	19.9	1.73	12.563		
600.0	598.7	598.7	598.7	1.2	1.0	-152.24	0.7	-14.7	31.7	29.7	2.07	15.324		
700.0	697.5	697.5	697.5	1.5	1.2	-161.22	0.7	-14.7	46.2	43.8	2.41	19.182		
754.4	750.9	750.9	750.9	1.7	1.3	-164.46	0.7	-14.7	55.7	53.1	2.59	21.526		
800.0	795.7	795.7	795.7	1.9	1.4	-166.55	0.7	-14.7	64.2	61.5	2.74	23.414		
900.0	893.8	893.8	893.8	2.2	1.5	-169.64	0.7	-14.7	83.0	80.0	3.08	26.942		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design N15 595 Pad - LR14B N15 595 - 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					Separation Factor	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			
0.0	0.0	0.0	0.0	0.0	0.0	93.70	-2.9	45.1	45.2					
100.0	100.0	100.0	100.0	0.1	0.1	93.70	-2.9	45.1	45.2	44.9	0.30	152.251		
200.0	200.0	200.0	200.0	0.3	0.3	93.70	-2.9	45.1	45.2	44.5	0.65	69.953		
233.0	233.0	233.0	233.0	0.4	0.4	90.07	-2.9	45.1	45.2	44.4	0.76	59.264 CC		
300.0	300.0	300.0	300.0	0.5	0.5	92.04	-2.9	45.1	45.2	44.2	1.00	45.270 ES		
400.0	399.8	399.8	399.8	0.7	0.7	98.59	-2.9	45.1	45.7	44.3	1.37	33.412		
500.0	499.5	499.5	499.5	0.9	0.8	108.91	-2.9	45.1	47.8	46.0	1.76	27.157		
600.0	598.7	598.7	598.7	1.2	1.0	121.31	-2.9	45.1	53.0	50.9	2.16	24.521 SF		
700.0	697.5	697.5	697.5	1.5	1.2	133.40	-2.9	45.1	62.6	60.1	2.55	24.561		
754.4	750.9	750.9	750.9	1.7	1.3	139.20	-2.9	45.1	69.9	67.1	2.75	25.440		
800.0	795.7	795.7	795.7	1.9	1.4	143.46	-2.9	45.1	76.8	73.9	2.91	26.419		
900.0	893.8	893.8	893.8	2.2	1.5	150.49	-2.9	45.1	93.0	89.8	3.25	28.655		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													N15 595 Pad - LR15C N15 595 - 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							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	93.49	-1.8	29.9	29.9								
100.0	100.0	100.0	100.0	0.1	0.1	93.49	-1.8	29.9	29.9	29.6	0.30	100.843					
200.0	200.0	200.0	200.0	0.3	0.3	93.49	-1.8	29.9	29.9	29.3	0.65	46.333 CC, ES					
300.0	300.0	299.0	299.0	0.5	0.5	94.18	-2.7	31.3	31.5	30.5	1.00	31.624					
400.0	399.8	397.5	397.3	0.7	0.7	105.12	-5.4	35.7	37.4	36.0	1.36	27.424 SF					
500.0	499.5	494.9	494.4	0.9	0.9	116.71	-9.7	42.8	49.1	47.4	1.74	28.176					
600.0	598.7	590.9	589.6	1.2	1.2	125.57	-15.7	52.6	67.4	65.3	2.14	31.536					
700.0	697.5	684.8	682.5	1.5	1.5	131.52	-23.1	64.8	92.1	89.5	2.55	36.081					

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR11A N15 595
Project:	Garfield County	TVD Reference:	KBE @ 8391.0ft (Patterson 302)
Reference Site:	N15 595 Pad	MD Reference:	KBE @ 8391.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR11A N15 595	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 8391.0ft (Patterson 302)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: LR11A N15 595
 Coordinate System is US State Plane 1983, Colorado Central Zone
 Grid Convergence at Surface is: -1.60°

