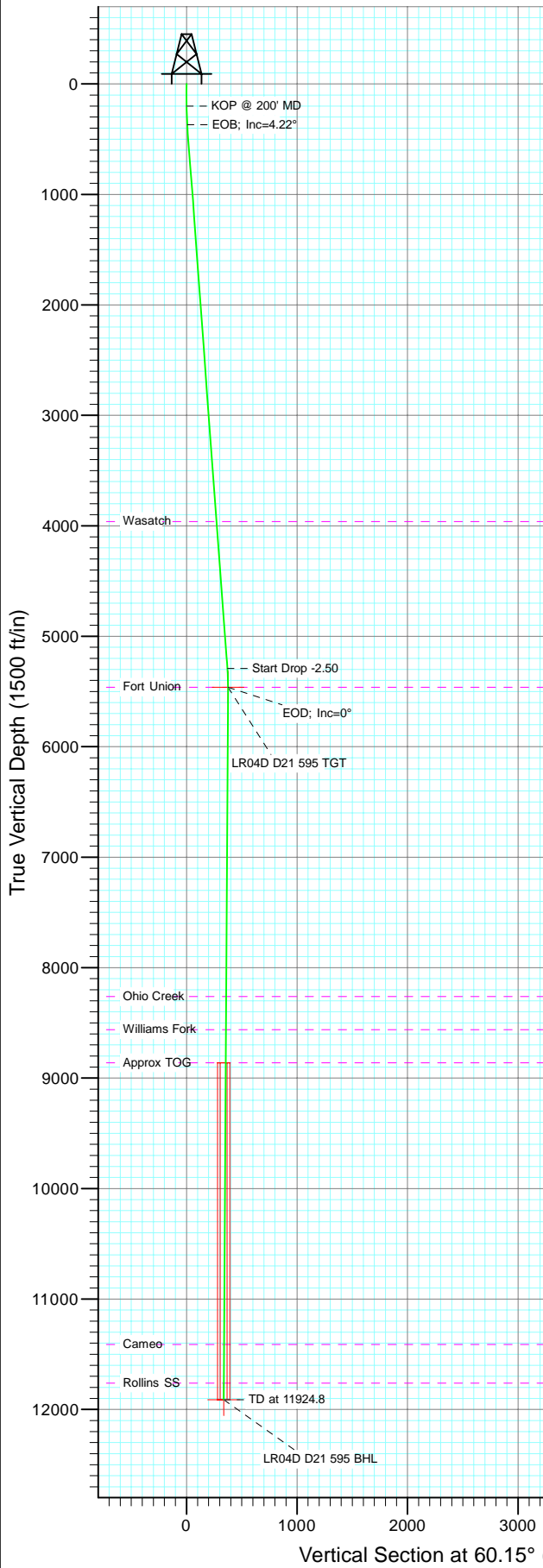
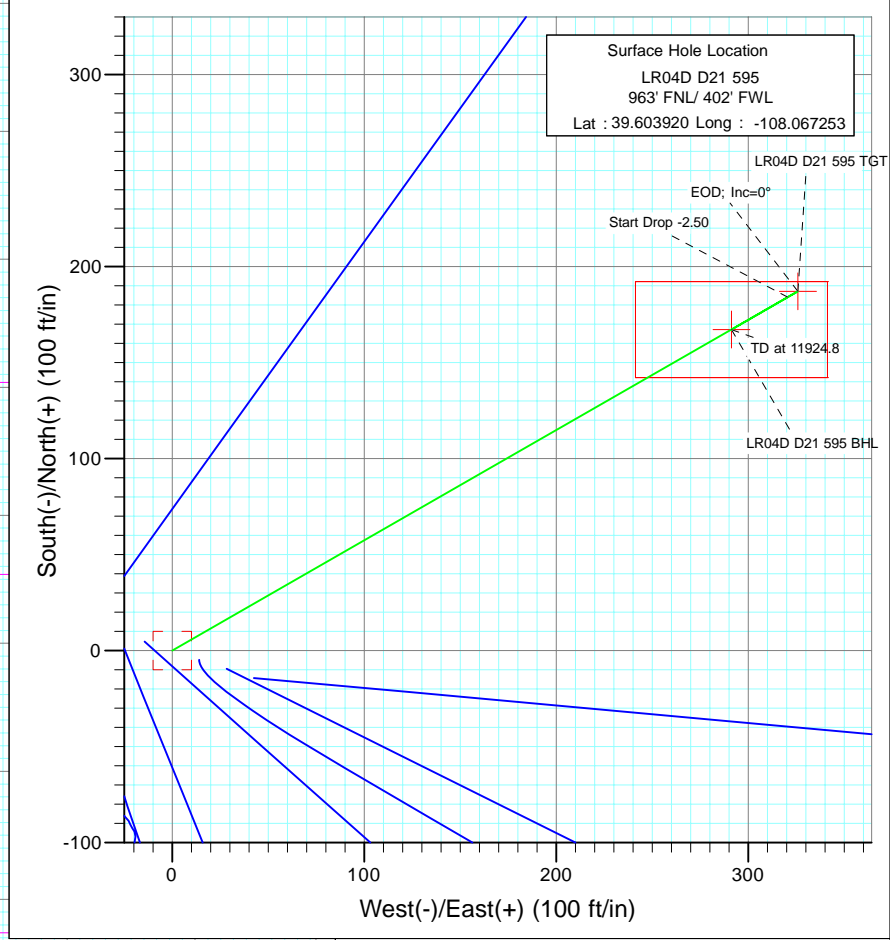




Project: Garfield County
 Site: D21 595 Pad
 Well: LR04D D21 595
 Wellbore: DD
 Design: Plan #2



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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	368.9	4.22	60.13	368.7	3.1	5.4	2.50	60.13	6.2	
4	5305.8	4.22	60.13	5292.3	184.1	320.6	0.00	0.00	369.7	
5	5474.7	0.00	0.00	5461.0	187.2	326.0	2.50	180.00	375.9	LR04D D21 595 TGT
6	5618.3	0.36	239.98	5604.6	187.0	325.6	0.25	239.98	375.4	
7	11924.8	0.36	239.98	11911.0	167.2	291.3	0.00	0.00	335.9	LR04D D21 595 BHL



Azimuths to True North
 Magnetic North: 10.44°

Magnetic Field
 Strength: 52368.8snT
 Dip Angle: 65.84°
 Date: 11/23/2010
 Model: IGRF200510

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3961.0	3970.9	Wasatch
5461.0	5474.7	Fort Union
8261.0	8274.8	Ohio Creek
8561.0	8574.8	Williams Fork
8861.0	8874.8	Approx TOG
11411.0	11424.8	Cameo
11761.0	11774.8	Rollins SS

DESIGN DETAILS: Plan #2					
1055XX; BH					
KBE @ 8278.0ft (Original Well Elev)					
Target	Azimuth	Origin	N/S	E/W	From TVD
LR04D D21 595 BHL	60.15	Slot	0.0	0.0	0.0

Bottom Hole Location
 LR04D D21 595
 795' FNL/ 694' FWL
 Lat : 39.604379
 Long. : -108.066219

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference: Well LR04D D21 595
Company: Berry Petroleum Company (NAD 83)	TVD Reference: KBE @ 8278.0ft (Original Well Elev)
Project: Garfield County	MD Reference: KBE @ 8278.0ft (Original Well Elev)
Site: D21 595 Pad	North Reference: True
Well: LR04D D21 595	Survey Calculation Method: Minimum Curvature
Wellbore: DD	
Design: Plan #2	

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 D21 595 Pad					
Site Position:		Northing:	1,655,115.77 ft	Latitude:	39.604011
From:	Lat/Long	Easting:	2,276,632.91 ft	Longitude:	-108.067607
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.62 °

Well LR04D D21 595						
Well Position	+N/-S	0.0 ft	Northing:	1,655,079.81 ft	Latitude:	39.603920
	+E/-W	0.0 ft	Easting:	2,276,731.68 ft	Longitude:	-108.067253
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,263.0 ft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF200510	11/23/2010	(°)	(°)	(nT)
			10.44	65.84	52,369

Design Plan #2					
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	60.15	

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	
368.9	4.22	60.13	368.7	3.1	5.4	2.50	2.50	0.00	60.13	
5,305.8	4.22	60.13	5,292.3	184.1	320.6	0.00	0.00	0.00	0.00	
5,474.7	0.00	0.00	5,461.0	187.2	326.0	2.50	-2.50	0.00	180.00	LR04D D21 595 TGT
5,618.3	0.36	239.98	5,604.6	187.0	325.6	0.25	0.25	-83.58	239.98	
11,924.8	0.36	239.98	11,911.0	167.2	291.3	0.00	0.00	0.00	0.00	LR04D D21 595 BHL

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR04D D21 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site:	D21 595 Pad	North Reference:	True
Well:	LR04D D21 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
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' MD
210.0	0.25	60.13	210.0	0.0	0.0	0.0	2.50	2.50	
240.0	1.00	60.13	240.0	0.2	0.3	0.3	2.50	2.50	
270.0	1.75	60.13	270.0	0.5	0.9	1.1	2.50	2.50	
300.0	2.50	60.13	300.0	1.1	1.9	2.2	2.50	2.50	
330.0	3.25	60.13	329.9	1.8	3.2	3.7	2.50	2.50	
360.0	4.00	60.13	359.9	2.8	4.8	5.6	2.50	2.50	
368.9	4.22	60.13	368.7	3.1	5.4	6.2	2.50	2.50	EOB; Inc=4.22°
390.0	4.22	60.13	389.8	3.9	6.7	7.8	0.00	0.00	
420.0	4.22	60.13	419.7	5.0	8.7	10.0	0.00	0.00	
450.0	4.22	60.13	449.6	6.1	10.6	12.2	0.00	0.00	
480.0	4.22	60.13	479.5	7.2	12.5	14.4	0.00	0.00	
510.0	4.22	60.13	509.5	8.3	14.4	16.6	0.00	0.00	
540.0	4.22	60.13	539.4	9.4	16.3	18.8	0.00	0.00	
570.0	4.22	60.13	569.3	10.5	18.2	21.0	0.00	0.00	
600.0	4.22	60.13	599.2	11.6	20.1	23.2	0.00	0.00	
630.0	4.22	60.13	629.1	12.7	22.1	25.4	0.00	0.00	
660.0	4.22	60.13	659.1	13.8	24.0	27.7	0.00	0.00	
690.0	4.22	60.13	689.0	14.9	25.9	29.9	0.00	0.00	
720.0	4.22	60.13	718.9	16.0	27.8	32.1	0.00	0.00	
750.0	4.22	60.13	748.8	17.1	29.7	34.3	0.00	0.00	
780.0	4.22	60.13	778.7	18.2	31.6	36.5	0.00	0.00	
810.0	4.22	60.13	808.7	19.3	33.6	38.7	0.00	0.00	
840.0	4.22	60.13	838.6	20.4	35.5	40.9	0.00	0.00	
870.0	4.22	60.13	868.5	21.5	37.4	43.1	0.00	0.00	
900.0	4.22	60.13	898.4	22.6	39.3	45.3	0.00	0.00	
930.0	4.22	60.13	928.3	23.7	41.2	47.5	0.00	0.00	
960.0	4.22	60.13	958.2	24.8	43.1	49.7	0.00	0.00	
990.0	4.22	60.13	988.2	25.9	45.0	51.9	0.00	0.00	
1,020.0	4.22	60.13	1,018.1	27.0	47.0	54.2	0.00	0.00	
1,050.0	4.22	60.13	1,048.0	28.1	48.9	56.4	0.00	0.00	
1,080.0	4.22	60.13	1,077.9	29.2	50.8	58.6	0.00	0.00	
1,110.0	4.22	60.13	1,107.8	30.3	52.7	60.8	0.00	0.00	
1,140.0	4.22	60.13	1,137.8	31.4	54.6	63.0	0.00	0.00	
1,170.0	4.22	60.13	1,167.7	32.5	56.5	65.2	0.00	0.00	
1,200.0	4.22	60.13	1,197.6	33.6	58.5	67.4	0.00	0.00	
1,230.0	4.22	60.13	1,227.5	34.7	60.4	69.6	0.00	0.00	
1,260.0	4.22	60.13	1,257.4	35.8	62.3	71.8	0.00	0.00	
1,290.0	4.22	60.13	1,287.3	36.9	64.2	74.0	0.00	0.00	
1,320.0	4.22	60.13	1,317.3	38.0	66.1	76.2	0.00	0.00	
1,350.0	4.22	60.13	1,347.2	39.1	68.0	78.4	0.00	0.00	
1,380.0	4.22	60.13	1,377.1	40.2	69.9	80.7	0.00	0.00	
1,410.0	4.22	60.13	1,407.0	41.3	71.9	82.9	0.00	0.00	
1,440.0	4.22	60.13	1,436.9	42.4	73.8	85.1	0.00	0.00	
1,470.0	4.22	60.13	1,466.9	43.5	75.7	87.3	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR04D D21 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site:	D21 595 Pad	North Reference:	True
Well:	LR04D D21 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
1,500.0	4.22	60.13	1,496.8	44.6	77.6	89.5	0.00	0.00	
1,530.0	4.22	60.13	1,526.7	45.7	79.5	91.7	0.00	0.00	
1,560.0	4.22	60.13	1,556.6	46.8	81.4	93.9	0.00	0.00	
1,590.0	4.22	60.13	1,586.5	47.9	83.3	96.1	0.00	0.00	
1,620.0	4.22	60.13	1,616.5	49.0	85.3	98.3	0.00	0.00	
1,650.0	4.22	60.13	1,646.4	50.1	87.2	100.5	0.00	0.00	
1,680.0	4.22	60.13	1,676.3	51.2	89.1	102.7	0.00	0.00	
1,710.0	4.22	60.13	1,706.2	52.3	91.0	104.9	0.00	0.00	
1,740.0	4.22	60.13	1,736.1	53.4	92.9	107.2	0.00	0.00	
1,770.0	4.22	60.13	1,766.0	54.5	94.8	109.4	0.00	0.00	
1,800.0	4.22	60.13	1,796.0	55.6	96.8	111.6	0.00	0.00	
1,830.0	4.22	60.13	1,825.9	56.7	98.7	113.8	0.00	0.00	
1,860.0	4.22	60.13	1,855.8	57.8	100.6	116.0	0.00	0.00	
1,890.0	4.22	60.13	1,885.7	58.9	102.5	118.2	0.00	0.00	
1,920.0	4.22	60.13	1,915.6	60.0	104.4	120.4	0.00	0.00	
1,950.0	4.22	60.13	1,945.6	61.1	106.3	122.6	0.00	0.00	
1,980.0	4.22	60.13	1,975.5	62.2	108.2	124.8	0.00	0.00	
2,010.0	4.22	60.13	2,005.4	63.3	110.2	127.0	0.00	0.00	
2,040.0	4.22	60.13	2,035.3	64.4	112.1	129.2	0.00	0.00	
2,070.0	4.22	60.13	2,065.2	65.5	114.0	131.5	0.00	0.00	
2,100.0	4.22	60.13	2,095.1	66.6	115.9	133.7	0.00	0.00	
2,130.0	4.22	60.13	2,125.1	67.7	117.8	135.9	0.00	0.00	
2,160.0	4.22	60.13	2,155.0	68.8	119.7	138.1	0.00	0.00	
2,190.0	4.22	60.13	2,184.9	69.9	121.6	140.3	0.00	0.00	
2,220.0	4.22	60.13	2,214.8	71.0	123.6	142.5	0.00	0.00	
2,250.0	4.22	60.13	2,244.7	72.1	125.5	144.7	0.00	0.00	
2,280.0	4.22	60.13	2,274.7	73.2	127.4	146.9	0.00	0.00	
2,310.0	4.22	60.13	2,304.6	74.3	129.3	149.1	0.00	0.00	
2,340.0	4.22	60.13	2,334.5	75.4	131.2	151.3	0.00	0.00	
2,370.0	4.22	60.13	2,364.4	76.5	133.1	153.5	0.00	0.00	
2,400.0	4.22	60.13	2,394.3	77.6	135.1	155.7	0.00	0.00	
2,430.0	4.22	60.13	2,424.3	78.7	137.0	158.0	0.00	0.00	
2,460.0	4.22	60.13	2,454.2	79.8	138.9	160.2	0.00	0.00	
2,490.0	4.22	60.13	2,484.1	80.9	140.8	162.4	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
LR04D D21 595 TGT	0.00	0.00	5,461.0	187.2	326.0	1,655,257.72	2,277,062.79	39.604434	-108.066096
- plan misses target center by 2984.6ft at 2490.0ft MD (2484.1 TVD, 80.9 N, 140.8 E)									
- Point									
LR04D D21 595 BHL	0.00	0.00	11,911.0	167.2	291.3	1,655,238.71	2,277,027.63	39.604379	-108.066219
- plan misses target center by 9428.5ft at 2490.0ft MD (2484.1 TVD, 80.9 N, 140.8 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR04D D21 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site:	D21 595 Pad	North Reference:	True
Well:	LR04D D21 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
2,500.0	4.22	60.13	2,494.1	81.2	141.4	163.1	0.00	0.00	
2,600.0	4.22	60.13	2,593.8	84.9	147.8	170.5	0.00	0.00	
2,700.0	4.22	60.13	2,693.5	88.6	154.2	177.8	0.00	0.00	
2,800.0	4.22	60.13	2,793.3	92.2	160.6	185.2	0.00	0.00	
2,900.0	4.22	60.13	2,893.0	95.9	167.0	192.6	0.00	0.00	
3,000.0	4.22	60.13	2,992.7	99.6	173.4	199.9	0.00	0.00	
3,100.0	4.22	60.13	3,092.4	103.2	179.7	207.3	0.00	0.00	
3,200.0	4.22	60.13	3,192.2	106.9	186.1	214.6	0.00	0.00	
3,300.0	4.22	60.13	3,291.9	110.6	192.5	222.0	0.00	0.00	
3,400.0	4.22	60.13	3,391.6	114.2	198.9	229.4	0.00	0.00	
3,500.0	4.22	60.13	3,491.4	117.9	205.3	236.7	0.00	0.00	
3,600.0	4.22	60.13	3,591.1	121.6	211.7	244.1	0.00	0.00	
3,700.0	4.22	60.13	3,690.8	125.2	218.0	251.4	0.00	0.00	
3,800.0	4.22	60.13	3,790.5	128.9	224.4	258.8	0.00	0.00	
3,900.0	4.22	60.13	3,890.3	132.6	230.8	266.2	0.00	0.00	
3,970.9	4.22	60.13	3,961.0	135.2	235.3	271.4	0.00	0.00	Wasatch
4,000.0	4.22	60.13	3,990.0	136.2	237.2	273.5	0.00	0.00	
4,100.0	4.22	60.13	4,089.7	139.9	243.6	280.9	0.00	0.00	
4,200.0	4.22	60.13	4,189.5	143.6	250.0	288.3	0.00	0.00	
4,300.0	4.22	60.13	4,289.2	147.2	256.3	295.6	0.00	0.00	
4,400.0	4.22	60.13	4,388.9	150.9	262.7	303.0	0.00	0.00	
4,500.0	4.22	60.13	4,488.6	154.6	269.1	310.3	0.00	0.00	
4,600.0	4.22	60.13	4,588.4	158.2	275.5	317.7	0.00	0.00	
4,700.0	4.22	60.13	4,688.1	161.9	281.9	325.1	0.00	0.00	
4,800.0	4.22	60.13	4,787.8	165.6	288.3	332.4	0.00	0.00	
4,900.0	4.22	60.13	4,887.6	169.2	294.7	339.8	0.00	0.00	
5,000.0	4.22	60.13	4,987.3	172.9	301.0	347.1	0.00	0.00	
5,100.0	4.22	60.13	5,087.0	176.6	307.4	354.5	0.00	0.00	
5,200.0	4.22	60.13	5,186.7	180.2	313.8	361.9	0.00	0.00	
5,300.0	4.22	60.13	5,286.5	183.9	320.2	369.2	0.00	0.00	
5,305.8	4.22	60.13	5,292.3	184.1	320.6	369.7	0.00	0.00	Start Drop -2.50
5,400.0	1.87	60.13	5,386.3	186.6	324.9	374.7	2.50	-2.50	
5,474.7	0.00	0.00	5,461.0	187.2	326.0	375.9	2.50	-2.50	EOD; Inc=0° - Fort Union - LR04D D21 595 TG
5,500.0	0.06	239.98	5,486.3	187.2	325.9	375.9	0.25	0.25	
5,600.0	0.31	239.98	5,586.3	187.0	325.7	375.5	0.25	0.25	
5,618.3	0.36	239.98	5,604.6	187.0	325.6	375.4	0.25	0.25	
5,700.0	0.36	239.98	5,686.3	186.7	325.1	374.9	0.00	0.00	
5,800.0	0.36	239.98	5,786.3	186.4	324.6	374.3	0.00	0.00	
5,900.0	0.36	239.98	5,886.3	186.1	324.0	373.7	0.00	0.00	
6,000.0	0.36	239.98	5,986.3	185.8	323.5	373.0	0.00	0.00	
6,100.0	0.36	239.98	6,086.3	185.5	322.9	372.4	0.00	0.00	
6,200.0	0.36	239.98	6,186.3	185.2	322.4	371.8	0.00	0.00	
6,300.0	0.36	239.98	6,286.3	184.8	321.9	371.2	0.00	0.00	
6,400.0	0.36	239.98	6,386.3	184.5	321.3	370.5	0.00	0.00	
6,500.0	0.36	239.98	6,486.3	184.2	320.8	369.9	0.00	0.00	
6,600.0	0.36	239.98	6,586.3	183.9	320.2	369.3	0.00	0.00	
6,700.0	0.36	239.98	6,686.3	183.6	319.7	368.7	0.00	0.00	
6,800.0	0.36	239.98	6,786.3	183.3	319.1	368.0	0.00	0.00	
6,900.0	0.36	239.98	6,886.3	183.0	318.6	367.4	0.00	0.00	
7,000.0	0.36	239.98	6,986.3	182.6	318.1	366.8	0.00	0.00	
7,100.0	0.36	239.98	7,086.3	182.3	317.5	366.1	0.00	0.00	
7,200.0	0.36	239.98	7,186.3	182.0	317.0	365.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR04D D21 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site:	D21 595 Pad	North Reference:	True
Well:	LR04D D21 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,300.0	0.36	239.98	7,286.3	181.7	316.4	364.9	0.00	0.00	
7,400.0	0.36	239.98	7,386.3	181.4	315.9	364.3	0.00	0.00	
7,500.0	0.36	239.98	7,486.3	181.1	315.4	363.6	0.00	0.00	
7,600.0	0.36	239.98	7,586.3	180.8	314.8	363.0	0.00	0.00	
7,700.0	0.36	239.98	7,686.3	180.4	314.3	362.4	0.00	0.00	
7,800.0	0.36	239.98	7,786.3	180.1	313.7	361.8	0.00	0.00	
7,900.0	0.36	239.98	7,886.3	179.8	313.2	361.1	0.00	0.00	
8,000.0	0.36	239.98	7,986.3	179.5	312.6	360.5	0.00	0.00	
8,100.0	0.36	239.98	8,086.2	179.2	312.1	359.9	0.00	0.00	
8,200.0	0.36	239.98	8,186.2	178.9	311.6	359.3	0.00	0.00	
8,274.8	0.36	239.98	8,261.0	178.6	311.1	358.8	0.00	0.00	Ohio Creek
8,300.0	0.36	239.98	8,286.2	178.6	311.0	358.6	0.00	0.00	
8,400.0	0.36	239.98	8,386.2	178.3	310.5	358.0	0.00	0.00	
8,500.0	0.36	239.98	8,486.2	177.9	309.9	357.4	0.00	0.00	
8,574.8	0.36	239.98	8,561.0	177.7	309.5	356.9	0.00	0.00	Williams Fork
8,600.0	0.36	239.98	8,586.2	177.6	309.4	356.7	0.00	0.00	
8,700.0	0.36	239.98	8,686.2	177.3	308.8	356.1	0.00	0.00	
8,800.0	0.36	239.98	8,786.2	177.0	308.3	355.5	0.00	0.00	
8,874.8	0.36	239.98	8,861.0	176.8	307.9	355.0	0.00	0.00	Approx TOG
8,900.0	0.36	239.98	8,886.2	176.7	307.8	354.9	0.00	0.00	
9,000.0	0.36	239.98	8,986.2	176.4	307.2	354.2	0.00	0.00	
9,100.0	0.36	239.98	9,086.2	176.1	306.7	353.6	0.00	0.00	
9,200.0	0.36	239.98	9,186.2	175.7	306.1	353.0	0.00	0.00	
9,300.0	0.36	239.98	9,286.2	175.4	305.6	352.4	0.00	0.00	
9,400.0	0.36	239.98	9,386.2	175.1	305.0	351.7	0.00	0.00	
9,500.0	0.36	239.98	9,486.2	174.8	304.5	351.1	0.00	0.00	
9,600.0	0.36	239.98	9,586.2	174.5	304.0	350.5	0.00	0.00	
9,700.0	0.36	239.98	9,686.2	174.2	303.4	349.9	0.00	0.00	
9,800.0	0.36	239.98	9,786.2	173.9	302.9	349.2	0.00	0.00	
9,900.0	0.36	239.98	9,886.2	173.6	302.3	348.6	0.00	0.00	
10,000.0	0.36	239.98	9,986.2	173.2	301.8	348.0	0.00	0.00	
10,100.0	0.36	239.98	10,086.2	172.9	301.2	347.4	0.00	0.00	
10,200.0	0.36	239.98	10,186.2	172.6	300.7	346.7	0.00	0.00	
10,300.0	0.36	239.98	10,286.2	172.3	300.2	346.1	0.00	0.00	
10,400.0	0.36	239.98	10,386.2	172.0	299.6	345.5	0.00	0.00	
10,500.0	0.36	239.98	10,486.2	171.7	299.1	344.8	0.00	0.00	
10,600.0	0.36	239.98	10,586.2	171.4	298.5	344.2	0.00	0.00	
10,700.0	0.36	239.98	10,686.2	171.0	298.0	343.6	0.00	0.00	
10,800.0	0.36	239.98	10,786.2	170.7	297.4	343.0	0.00	0.00	
10,900.0	0.36	239.98	10,886.2	170.4	296.9	342.3	0.00	0.00	
11,000.0	0.36	239.98	10,986.2	170.1	296.4	341.7	0.00	0.00	
11,100.0	0.36	239.98	11,086.2	169.8	295.8	341.1	0.00	0.00	
11,200.0	0.36	239.98	11,186.2	169.5	295.3	340.5	0.00	0.00	
11,300.0	0.36	239.98	11,286.2	169.2	294.7	339.8	0.00	0.00	
11,400.0	0.36	239.98	11,386.2	168.8	294.2	339.2	0.00	0.00	
11,424.8	0.36	239.98	11,411.0	168.8	294.1	339.0	0.00	0.00	Cameo
11,500.0	0.36	239.98	11,486.2	168.5	293.7	338.6	0.00	0.00	
11,600.0	0.36	239.98	11,586.2	168.2	293.1	338.0	0.00	0.00	
11,700.0	0.36	239.98	11,686.2	167.9	292.6	337.3	0.00	0.00	
11,774.8	0.36	239.98	11,761.0	167.7	292.2	336.9	0.00	0.00	Rollins SS
11,800.0	0.36	239.98	11,786.2	167.6	292.0	336.7	0.00	0.00	
11,900.0	0.36	239.98	11,886.2	167.3	291.5	336.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well LR04D D21 595
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site:	D21 595 Pad	North Reference:	True
Well:	LR04D D21 595	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
11,924.8	0.36	239.98	11,911.0	167.2	291.3	335.9	0.00	0.00	TD at 11924.8 - LR04D D21 595 BHL

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
LR04D D21 595 TGT - plan hits target center - Point	0.00	0.00	5,461.0	187.2	326.0	1,655,257.72	2,277,062.79	39.604434	-108.066096
LR04D D21 595 BHL - plan hits target center - Rectangle (sides W50.0 H100.0 D0.0)	0.00	0.00	11,911.0	167.2	291.3	1,655,238.71	2,277,027.63	39.604379	-108.066219

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,970.9	3,961.0	Wasatch		0.00	
5,474.7	5,461.0	Fort Union		0.00	
8,274.8	8,261.0	Ohio Creek		0.00	
8,574.8	8,561.0	Williams Fork		0.00	
8,874.8	8,861.0	Approx TOG		0.00	
11,424.8	11,411.0	Cameo		0.00	
11,774.8	11,761.0	Rollins SS		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' MD
368.9	368.7	3.1	5.4	EOB; Inc=4.22°
5,305.8	5,292.3	184.1	320.6	Start Drop -2.50
5,474.7	5,461.0	187.2	326.0	EOD; Inc=0°
11,924.8	11,911.0	187.0	325.6	TD at 11924.8

Berry Petroleum Company

(NAD 83)

Garfield County

D21 595 Pad

LR04D D21 595

DD

Plan #2

Anticollision Report

03 December, 2010

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	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 1,399.5ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	12/3/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,924.8	Plan #2 (DD)	MWD	Geolink MWD

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						
D21 595 Pad						
LR03C D21 595 - DD - Plan #2	200.0	200.0	44.9	44.2	69.461	CC
LR03C D21 595 - DD - Plan #2	300.0	298.5	45.1	44.1	45.292	ES
LR03C D21 595 - DD - Plan #2	11,924.8	11,995.3	1,111.5	1,068.9	26.139	SF
LR04A D21 595 - DD - Plan #2	200.0	200.0	45.1	44.5	69.875	CC, ES
LR04A D21 595 - DD - Plan #2	11,924.8	11,948.2	313.5	270.4	7.272	SF
LR04B D21 595 - DD - Plan #2	200.0	200.0	75.1	74.5	116.320	CC, ES
LR04B D21 595 - DD - Plan #2	11,924.8	11,977.1	698.7	655.2	16.049	SF
LR04C D21 595 (Existing) - DD - DD	237.2	234.6	120.7	120.0	154.336	CC, ES
LR04C D21 595 (Existing) - DD - DD	11,924.8	11,902.5	556.9	515.1	13.347	SF
LR05A D21 595 - DD - Plan #2	200.0	200.0	30.0	29.3	46.445	CC, ES
LR05A D21 595 - DD - Plan #2	700.0	698.8	54.4	51.8	21.683	SF
LR05B D21 595 (Existing) - DD - DD	0.0	0.0	137.3			
LR05B D21 595 (Existing) - DD - DD	2,800.0	2,783.3	339.8	328.7	30.640	SF
LR05BDR D21-595 - DD - Plan #2	200.0	200.0	105.1	104.4	156.424	CC, ES
LR05BDR D21-595 - DD - Plan #2	11,924.8	11,915.3	751.9	709.4	17.688	SF
LR05C D21 595 - DD - Plan #2	200.0	200.0	60.0	59.3	92.890	CC, ES
LR05C D21 595 - DD - Plan #2	800.0	797.6	90.3	87.1	28.990	SF
LR05D D21 595 - DD - Plan #2	200.0	200.0	90.0	89.3	139.336	CC, ES
LR05D D21 595 - DD - Plan #2	1,000.0	992.6	146.3	142.3	35.851	SF
LR06B D21 595 - DD - Plan #2	525.1	524.3	22.6	20.7	12.203	CC, ES
LR06B D21 595 - DD - Plan #2	600.0	598.6	23.9	21.8	11.182	SF
LR06C D21 595 - DD - Plan #2	200.0	200.0	15.1	14.5	23.430	CC, ES
LR06C D21 595 - DD - Plan #2	400.0	399.8	21.8	20.4	16.109	SF
LR06D D21 595 - DD - Plan #2	294.0	293.7	14.6	13.6	14.898	CC
LR06D D21 595 - DD - Plan #2	300.0	299.7	14.6	13.6	14.584	ES
LR06D D21 595 - DD - Plan #2	400.0	398.8	17.4	16.1	12.696	SF

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	108.46	-14.2	42.5	44.9						
100.0	100.0	100.0	100.0	0.1	0.1	108.46	-14.2	42.5	44.9	44.6	0.30	151.180			
200.0	200.0	200.0	200.0	0.3	0.3	108.46	-14.2	42.5	44.9	44.2	0.65	69.461 CC			
300.0	300.0	298.5	298.5	0.5	0.5	49.87	-14.4	44.2	45.1	44.1	1.00	45.292 ES			
400.0	399.8	396.9	396.8	0.7	0.7	54.18	-14.8	49.3	46.1	44.8	1.36	33.895			
500.0	499.5	495.3	494.7	0.9	0.9	57.74	-15.6	57.7	50.0	48.3	1.74	28.725			
600.0	599.2	593.3	592.1	1.1	1.2	59.30	-16.7	69.4	57.2	55.1	2.13	26.798			
700.0	698.9	691.3	688.9	1.3	1.5	59.31	-18.0	84.3	67.4	64.9	2.53	26.611			
800.0	798.7	790.7	787.0	1.5	1.8	58.99	-19.5	100.5	78.6	75.7	2.94	26.759			
900.0	898.4	890.1	885.0	1.8	2.1	58.76	-21.0	116.7	89.8	86.4	3.34	26.859			
1,000.0	998.1	989.4	983.0	2.0	2.4	58.58	-22.4	132.8	100.9	97.2	3.75	26.930			
1,100.0	1,097.9	1,088.8	1,081.1	2.2	2.8	58.43	-23.9	149.0	112.1	108.0	4.16	26.982			
1,200.0	1,197.6	1,188.2	1,179.1	2.4	3.1	58.31	-25.4	165.1	123.3	118.7	4.56	27.023			
1,300.0	1,297.3	1,287.6	1,277.2	2.6	3.4	58.21	-26.9	181.3	134.5	129.5	4.97	27.054			
1,400.0	1,397.0	1,386.9	1,375.2	2.8	3.7	58.13	-28.3	197.5	145.6	140.3	5.38	27.080			
1,500.0	1,496.8	1,486.3	1,473.2	3.1	4.1	58.06	-29.8	213.6	156.8	151.0	5.79	27.101			
1,600.0	1,596.5	1,585.7	1,571.3	3.3	4.4	58.00	-31.3	229.8	168.0	161.8	6.19	27.118			
1,700.0	1,696.2	1,685.0	1,669.3	3.5	4.7	57.94	-32.7	246.0	179.2	172.6	6.60	27.133			
1,800.0	1,796.0	1,784.4	1,767.3	3.7	5.1	57.89	-34.2	262.1	190.3	183.3	7.01	27.145			
1,900.0	1,895.7	1,883.8	1,865.4	3.9	5.4	57.85	-35.7	278.3	201.5	194.1	7.42	27.156			
2,000.0	1,995.4	1,983.2	1,963.4	4.1	5.7	57.81	-37.2	294.5	212.7	204.9	7.83	27.166			
2,100.0	2,095.1	2,082.5	2,061.5	4.4	6.1	57.78	-38.6	310.6	223.9	215.6	8.24	27.174			
2,200.0	2,194.9	2,181.9	2,159.5	4.6	6.4	57.75	-40.1	326.8	235.1	226.4	8.65	27.182			
2,300.0	2,294.6	2,281.3	2,257.5	4.8	6.7	57.72	-41.6	343.0	246.2	237.2	9.06	27.188			
2,400.0	2,394.3	2,380.7	2,355.6	5.0	7.1	57.69	-43.1	359.1	257.4	247.9	9.47	27.194			
2,500.0	2,494.1	2,480.0	2,453.6	5.2	7.4	57.67	-44.5	375.3	268.6	258.7	9.87	27.199			
2,600.0	2,593.8	2,579.4	2,551.7	5.4	7.8	57.65	-46.0	391.5	279.8	269.5	10.28	27.204			
2,700.0	2,693.5	2,678.8	2,649.7	5.7	8.1	57.62	-47.5	407.6	290.9	280.2	10.69	27.209			
2,800.0	2,793.3	2,778.2	2,747.7	5.9	8.4	57.61	-49.0	423.8	302.1	291.0	11.10	27.213			
2,900.0	2,893.0	2,877.5	2,845.8	6.1	8.8	57.59	-50.4	440.0	313.3	301.8	11.51	27.216			
3,000.0	2,992.7	2,976.9	2,943.8	6.3	9.1	57.57	-51.9	456.1	324.5	312.6	11.92	27.220			
3,100.0	3,092.4	3,076.3	3,041.8	6.5	9.4	57.56	-53.4	472.3	335.7	323.3	12.33	27.223			
3,200.0	3,192.2	3,175.6	3,139.9	6.7	9.8	57.54	-54.8	488.4	346.8	334.1	12.74	27.226			
3,300.0	3,291.9	3,275.0	3,237.9	7.0	10.1	57.53	-56.3	504.6	358.0	344.9	13.15	27.229			
3,400.0	3,391.6	3,374.4	3,336.0	7.2	10.4	57.52	-57.8	520.8	369.2	355.6	13.56	27.231			
3,500.0	3,491.4	3,473.8	3,434.0	7.4	10.8	57.51	-59.3	536.9	380.4	366.4	13.97	27.234			
3,600.0	3,591.1	3,573.1	3,532.0	7.6	11.1	57.49	-60.7	553.1	391.5	377.2	14.38	27.236			
3,700.0	3,690.8	3,672.5	3,630.1	7.8	11.4	57.48	-62.2	569.3	402.7	387.9	14.79	27.238			
3,800.0	3,790.5	3,771.9	3,728.1	8.0	11.8	57.47	-63.7	585.4	413.9	398.7	15.19	27.240			
3,900.0	3,890.3	3,871.3	3,826.2	8.3	12.1	57.46	-65.2	601.6	425.1	409.5	15.60	27.242			
4,000.0	3,990.0	3,970.6	3,924.2	8.5	12.4	57.46	-66.6	617.8	436.2	420.2	16.01	27.243			
4,100.0	4,089.7	4,070.0	4,022.2	8.7	12.8	57.45	-68.1	633.9	447.4	431.0	16.42	27.245			
4,200.0	4,189.5	4,169.4	4,120.3	8.9	13.1	57.44	-69.6	650.1	458.6	441.8	16.83	27.246			
4,300.0	4,289.2	4,268.8	4,218.3	9.1	13.4	57.43	-71.1	666.3	469.8	452.5	17.24	27.248			
4,400.0	4,388.9	4,368.1	4,316.4	9.3	13.8	57.42	-72.5	682.4	481.0	463.3	17.65	27.249			
4,500.0	4,488.6	4,467.5	4,414.4	9.6	14.1	57.42	-74.0	698.6	492.1	474.1	18.06	27.251			
4,600.0	4,588.4	4,566.9	4,512.4	9.8	14.4	57.41	-75.5	714.8	503.3	484.8	18.47	27.252			
4,700.0	4,688.1	4,666.2	4,610.5	10.0	14.8	57.40	-76.9	730.9	514.5	495.6	18.88	27.253			
4,800.0	4,787.8	4,765.6	4,708.5	10.2	15.1	57.40	-78.4	747.1	525.7	506.4	19.29	27.254			
4,900.0	4,887.6	4,865.0	4,806.5	10.4	15.5	57.39	-79.9	763.2	536.8	517.1	19.70	27.255			
5,000.0	4,987.3	4,964.4	4,904.6	10.6	15.8	57.39	-81.4	779.4	548.0	527.9	20.11	27.256			
5,100.0	5,087.0	5,063.7	5,002.6	10.9	16.1	57.38	-82.8	795.6	559.2	538.7	20.52	27.257			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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		
5,200.0	5,186.7	5,163.1	5,100.7	11.1	16.5	57.38	-84.3	811.7	570.4	549.5	20.93	27.258			
5,300.0	5,286.5	5,262.5	5,198.7	11.3	16.8	57.37	-85.8	827.9	581.6	560.2	21.33	27.259			
5,400.0	5,386.3	5,361.7	5,296.6	11.5	17.1	57.45	-87.3	844.0	593.8	572.1	21.71	27.352			
5,500.0	5,486.3	5,460.5	5,394.1	11.6	17.5	-122.65	-88.7	860.1	608.3	586.3	22.01	27.641			
5,600.0	5,586.3	5,559.1	5,491.4	11.8	17.8	-123.21	-90.2	876.2	623.6	601.4	22.27	28.006			
5,700.0	5,686.3	5,657.7	5,588.6	11.9	18.1	-123.78	-91.6	892.2	639.2	616.7	22.53	28.375			
5,800.0	5,786.3	5,756.3	5,685.9	12.0	18.5	-124.34	-93.1	908.2	654.9	632.1	22.79	28.734			
5,900.0	5,886.3	5,854.8	5,783.1	12.2	18.8	-124.87	-94.6	924.3	670.6	647.5	23.06	29.083			
6,000.0	5,986.3	5,953.4	5,880.4	12.3	19.1	-125.38	-96.0	940.3	686.4	663.0	23.33	29.422			
6,100.0	6,086.3	6,052.0	5,977.6	12.5	19.5	-125.86	-97.5	956.3	702.2	678.6	23.60	29.751			
6,200.0	6,186.3	6,150.6	6,074.8	12.6	19.8	-126.32	-98.9	972.4	718.0	694.2	23.88	30.071			
6,300.0	6,286.3	6,249.1	6,172.1	12.7	20.1	-126.76	-100.4	988.4	734.0	709.8	24.16	30.382			
6,400.0	6,386.3	6,347.7	6,269.3	12.9	20.5	-127.18	-101.9	1,004.4	749.9	725.5	24.44	30.684			
6,500.0	6,486.3	6,446.3	6,366.6	13.0	20.8	-127.59	-103.3	1,020.5	765.9	741.2	24.72	30.978			
6,600.0	6,586.3	6,544.8	6,463.8	13.2	21.1	-127.98	-104.8	1,036.5	781.9	756.9	25.01	31.263			
6,700.0	6,686.3	6,643.4	6,561.1	13.3	21.5	-128.35	-106.3	1,052.5	798.0	772.7	25.30	31.540			
6,800.0	6,786.3	6,742.0	6,658.3	13.5	21.8	-128.71	-107.7	1,068.6	814.1	788.5	25.59	31.809			
6,900.0	6,886.3	6,840.6	6,755.6	13.6	22.1	-129.06	-109.2	1,084.6	830.2	804.3	25.89	32.071			
7,000.0	6,986.3	6,939.1	6,852.8	13.8	22.5	-129.39	-110.6	1,100.6	846.3	820.1	26.18	32.325			
7,100.0	7,086.3	7,037.7	6,950.1	13.9	22.8	-129.71	-112.1	1,116.7	862.5	836.0	26.48	32.572			
7,200.0	7,186.3	7,136.3	7,047.3	14.1	23.1	-130.01	-113.6	1,132.7	878.7	851.9	26.78	32.813			
7,300.0	7,286.3	7,234.8	7,144.6	14.2	23.4	-130.31	-115.0	1,148.7	894.9	867.8	27.08	33.047			
7,400.0	7,386.3	7,333.4	7,241.8	14.4	23.8	-130.60	-116.5	1,164.8	911.2	883.8	27.38	33.275			
7,500.0	7,486.3	7,432.0	7,339.1	14.5	24.1	-130.87	-117.9	1,180.8	927.4	899.7	27.69	33.497			
7,600.0	7,586.3	7,530.6	7,436.3	14.7	24.4	-131.14	-119.4	1,196.9	943.7	915.7	27.99	33.713			
7,700.0	7,686.3	7,629.1	7,533.6	14.8	24.8	-131.40	-120.9	1,212.9	960.0	931.7	28.30	33.923			
7,800.0	7,786.3	7,727.7	7,630.8	15.0	25.1	-131.64	-122.3	1,228.9	976.3	947.7	28.61	34.128			
7,900.0	7,886.3	7,826.3	7,728.1	15.1	25.4	-131.88	-123.8	1,245.0	992.7	963.8	28.92	34.327			
8,000.0	7,986.3	7,924.8	7,825.3	15.3	25.8	-132.12	-125.3	1,261.0	1,009.0	979.8	29.23	34.522			
8,100.0	8,086.2	8,023.4	7,922.6	15.5	26.1	-132.34	-126.7	1,277.0	1,025.4	995.9	29.54	34.711			
8,200.0	8,186.2	8,122.0	8,019.8	15.6	26.4	-132.56	-128.2	1,293.1	1,041.8	1,011.9	29.85	34.896			
8,300.0	8,286.2	8,220.6	8,117.0	15.8	26.8	-132.77	-129.6	1,309.1	1,058.2	1,028.0	30.17	35.076			
8,400.0	8,386.2	8,319.1	8,214.3	15.9	27.1	-132.98	-131.1	1,325.1	1,074.6	1,044.1	30.48	35.251			
8,500.0	8,486.2	8,417.7	8,311.5	16.1	27.4	-133.18	-132.6	1,341.2	1,091.0	1,060.2	30.80	35.423			
8,600.0	8,586.2	8,541.5	8,433.8	16.2	27.8	-133.41	-134.3	1,360.5	1,107.0	1,075.9	31.16	35.531			
8,700.0	8,686.2	8,702.0	8,593.2	16.4	28.2	-133.63	-136.0	1,378.5	1,118.5	1,086.9	31.57	35.427			
8,800.0	8,786.2	8,864.1	8,755.0	16.5	28.4	-133.76	-136.8	1,387.7	1,124.5	1,092.5	32.00	35.144			
8,900.0	8,886.2	8,997.0	8,888.0	16.7	28.6	-133.80	-136.9	1,388.7	1,125.6	1,093.2	32.38	34.762			
9,000.0	8,986.2	9,100.6	8,991.5	16.9	28.7	-133.80	-137.2	1,388.3	1,125.7	1,093.0	32.72	34.408			
9,100.0	9,086.2	9,204.1	9,095.0	17.0	28.8	-133.79	-137.6	1,387.5	1,125.5	1,092.4	33.05	34.050			
9,200.0	9,186.2	9,306.0	9,197.0	17.2	28.8	-133.77	-138.3	1,386.4	1,125.0	1,091.6	33.39	33.692			
9,300.0	9,286.2	9,406.0	9,297.0	17.3	28.9	-133.74	-139.0	1,385.2	1,124.5	1,090.8	33.73	33.343			
9,400.0	9,386.2	9,506.0	9,397.0	17.5	29.0	-133.71	-139.7	1,384.0	1,124.0	1,089.9	34.06	33.000			
9,500.0	9,486.2	9,606.0	9,496.9	17.7	29.1	-133.68	-140.4	1,382.8	1,123.5	1,089.1	34.39	32.664			
9,600.0	9,586.2	9,706.0	9,596.9	17.8	29.2	-133.66	-141.1	1,381.6	1,122.9	1,088.2	34.73	32.334			
9,700.0	9,686.2	9,806.0	9,696.9	18.0	29.3	-133.63	-141.8	1,380.4	1,122.4	1,087.3	35.06	32.010			
9,800.0	9,786.2	9,906.0	9,796.9	18.1	29.3	-133.60	-142.5	1,379.2	1,121.9	1,086.5	35.40	31.692			
9,900.0	9,886.2	10,006.0	9,896.9	18.3	29.4	-133.57	-143.2	1,378.0	1,121.4	1,085.6	35.74	31.379			
10,000.0	9,986.2	10,106.0	9,996.9	18.5	29.5	-133.54	-143.9	1,376.8	1,120.9	1,084.8	36.07	31.072			
10,100.0	10,086.2	10,206.0	10,096.9	18.6	29.6	-133.52	-144.5	1,375.6	1,120.3	1,083.9	36.41	30.771			
10,200.0	10,186.2	10,306.0	10,196.9	18.8	29.7	-133.49	-145.2	1,374.4	1,119.8	1,083.1	36.75	30.475			
10,300.0	10,286.2	10,406.0	10,296.8	18.9	29.8	-133.46	-145.9	1,373.2	1,119.3	1,082.2	37.08	30.184			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
10,400.0	10,386.2	10,506.0	10,396.8	19.1	29.9	-133.43	-146.6	1,372.0	1,118.8	1,081.4	37.42	29.899			
10,500.0	10,486.2	10,606.0	10,496.8	19.3	30.0	-133.40	-147.3	1,370.8	1,118.3	1,080.5	37.76	29.618			
10,600.0	10,586.2	10,706.0	10,596.8	19.4	30.1	-133.37	-148.0	1,369.6	1,117.7	1,079.6	38.09	29.342			
10,700.0	10,686.2	10,806.0	10,696.8	19.6	30.2	-133.35	-148.7	1,368.4	1,117.2	1,078.8	38.43	29.070			
10,800.0	10,786.2	10,906.0	10,796.8	19.8	30.3	-133.32	-149.4	1,367.2	1,116.7	1,077.9	38.77	28.804			
10,900.0	10,886.2	11,006.0	10,896.8	19.9	30.4	-133.29	-150.1	1,366.0	1,116.2	1,077.1	39.11	28.542			
11,000.0	10,986.2	11,106.0	10,996.8	20.1	30.4	-133.26	-150.8	1,364.8	1,115.7	1,076.2	39.45	28.284			
11,100.0	11,086.2	11,206.0	11,096.7	20.2	30.5	-133.23	-151.5	1,363.6	1,115.1	1,075.4	39.78	28.030			
11,200.0	11,186.2	11,306.0	11,196.7	20.4	30.6	-133.20	-152.2	1,362.4	1,114.6	1,074.5	40.12	27.781			
11,300.0	11,286.2	11,406.0	11,296.7	20.6	30.7	-133.18	-152.9	1,361.2	1,114.1	1,073.6	40.46	27.535			
11,400.0	11,386.2	11,506.0	11,396.7	20.7	30.8	-133.15	-153.6	1,360.0	1,113.6	1,072.8	40.80	27.294			
11,500.0	11,486.2	11,606.0	11,496.7	20.9	30.9	-133.12	-154.3	1,358.8	1,113.1	1,071.9	41.14	27.056			
11,600.0	11,586.2	11,706.0	11,596.7	21.1	31.0	-133.09	-154.9	1,357.6	1,112.6	1,071.1	41.48	26.822			
11,700.0	11,686.2	11,806.0	11,696.7	21.2	31.1	-133.06	-155.6	1,356.5	1,112.0	1,070.2	41.82	26.592			
11,800.0	11,786.2	11,906.0	11,796.7	21.4	31.2	-133.03	-156.3	1,355.3	1,111.5	1,069.4	42.16	26.366			
11,891.0	11,877.2	11,995.3	11,886.0	21.5	31.3	-133.01	-157.0	1,354.2	1,111.1	1,068.6	42.46	26.165			
11,900.0	11,886.2	11,995.3	11,886.0	21.6	31.3	-133.01	-157.0	1,354.2	1,111.1	1,068.6	42.48	26.155			
11,924.8	11,911.0	11,995.3	11,886.0	21.6	31.3	-133.01	-157.0	1,354.2	1,111.5	1,068.9	42.52	26.139 SF			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	-71.65	14.2	-42.8	45.1						
100.0	100.0	100.0	100.0	0.1	0.1	-71.65	14.2	-42.8	45.1	44.8	0.30	152.081			
200.0	200.0	200.0	200.0	0.3	0.3	-71.65	14.2	-42.8	45.1	44.5	0.65	69.875 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	-133.75	14.2	-42.8	46.6	45.6	1.00	46.719			
400.0	399.8	400.5	400.4	0.7	0.7	-137.04	15.6	-41.8	50.5	49.1	1.36	37.109			
500.0	499.5	501.1	501.0	0.9	0.9	-137.22	19.9	-38.7	53.9	52.1	1.74	30.936			
600.0	599.2	601.8	601.2	1.1	1.1	-134.04	27.1	-33.6	55.9	53.8	2.15	25.964			
700.0	698.9	701.9	700.6	1.3	1.3	-128.13	36.7	-26.6	57.4	54.8	2.61	21.986			
800.0	798.7	801.7	799.7	1.5	1.6	-122.11	46.7	-19.4	59.3	56.2	3.09	19.222			
900.0	898.4	901.5	898.7	1.8	1.9	-116.54	56.7	-12.2	61.8	58.3	3.57	17.316			
1,000.0	998.1	1,001.3	997.7	2.0	2.1	-111.45	66.7	-5.1	64.9	60.9	4.06	15.990			
1,100.0	1,097.9	1,101.1	1,096.8	2.2	2.4	-106.84	76.7	2.1	68.5	63.9	4.55	15.061			
1,200.0	1,197.6	1,200.9	1,195.8	2.4	2.7	-102.72	86.8	9.3	72.4	67.4	5.03	14.407			
1,300.0	1,297.3	1,300.7	1,294.8	2.6	2.9	-99.04	96.8	16.5	76.7	71.2	5.50	13.947			
1,400.0	1,397.0	1,400.5	1,393.8	2.8	3.2	-95.75	106.8	23.7	81.3	75.3	5.96	13.625			
1,500.0	1,496.8	1,500.3	1,492.9	3.1	3.5	-92.83	116.8	30.9	86.1	79.6	6.42	13.402			
1,600.0	1,596.5	1,600.0	1,591.9	3.3	3.7	-90.22	126.8	38.1	91.1	84.2	6.87	13.250			
1,700.0	1,696.2	1,699.8	1,690.9	3.5	4.0	-87.88	136.8	45.3	96.2	88.9	7.32	13.152			
1,800.0	1,796.0	1,799.6	1,790.0	3.7	4.3	-85.79	146.8	52.5	101.6	93.8	7.76	13.092			
1,900.0	1,895.7	1,899.4	1,889.0	3.9	4.6	-83.91	156.8	59.7	107.0	98.8	8.19	13.060			
2,000.0	1,995.4	1,999.2	1,988.0	4.1	4.8	-82.21	166.8	66.9	112.5	103.9	8.62	13.050			
2,100.0	2,095.1	2,099.0	2,087.1	4.4	5.1	-80.67	176.8	74.0	118.2	109.1	9.05	13.055			
2,200.0	2,194.9	2,198.8	2,186.1	4.6	5.4	-79.27	186.8	81.2	123.9	114.4	9.48	13.073			
2,300.0	2,294.6	2,298.6	2,285.1	4.8	5.7	-77.99	196.8	88.4	129.6	119.7	9.90	13.098			
2,400.0	2,394.3	2,398.4	2,384.1	5.0	5.9	-76.83	206.8	95.6	135.5	125.2	10.32	13.130			
2,500.0	2,494.1	2,498.2	2,483.2	5.2	6.2	-75.76	216.8	102.8	141.4	130.6	10.74	13.167			
2,600.0	2,593.8	2,598.0	2,582.2	5.4	6.5	-74.77	226.8	110.0	147.3	136.1	11.15	13.207			
2,700.0	2,693.5	2,697.8	2,681.2	5.7	6.8	-73.87	236.8	117.2	153.3	141.7	11.57	13.249			
2,800.0	2,793.3	2,797.6	2,780.3	5.9	7.1	-73.03	246.8	124.4	159.3	147.3	11.98	13.292			
2,900.0	2,893.0	2,897.4	2,879.3	6.1	7.3	-72.25	256.8	131.6	165.3	152.9	12.40	13.336			
3,000.0	2,992.7	2,997.2	2,978.3	6.3	7.6	-71.53	266.8	138.8	171.4	158.6	12.81	13.380			
3,100.0	3,092.4	3,096.9	3,077.4	6.5	7.9	-70.85	276.8	146.0	177.5	164.2	13.22	13.424			
3,200.0	3,192.2	3,196.7	3,176.4	6.7	8.2	-70.22	286.8	153.2	183.6	169.9	13.63	13.468			
3,300.0	3,291.9	3,296.5	3,275.4	7.0	8.4	-69.64	296.8	160.3	189.7	175.7	14.04	13.512			
3,400.0	3,391.6	3,396.3	3,374.5	7.2	8.7	-69.08	306.8	167.5	195.9	181.4	14.45	13.555			
3,500.0	3,491.4	3,496.1	3,473.5	7.4	9.0	-68.57	316.8	174.7	202.0	187.2	14.86	13.597			
3,600.0	3,591.1	3,595.9	3,572.5	7.6	9.3	-68.08	326.8	181.9	208.2	192.9	15.27	13.638			
3,700.0	3,690.8	3,695.7	3,671.5	7.8	9.5	-67.62	336.8	189.1	214.4	198.7	15.68	13.678			
3,800.0	3,790.5	3,795.5	3,770.6	8.0	9.8	-67.19	346.8	196.3	220.6	204.5	16.08	13.717			
3,900.0	3,890.3	3,895.3	3,869.6	8.3	10.1	-66.78	356.8	203.5	226.8	210.4	16.49	13.756			
4,000.0	3,990.0	3,995.1	3,968.6	8.5	10.4	-66.39	366.8	210.7	233.1	216.2	16.90	13.793			
4,100.0	4,089.7	4,094.9	4,067.7	8.7	10.6	-66.02	376.8	217.9	239.3	222.0	17.31	13.830			
4,200.0	4,189.5	4,194.7	4,166.7	8.9	10.9	-65.68	386.8	225.1	245.6	227.9	17.71	13.865			
4,300.0	4,289.2	4,294.5	4,265.7	9.1	11.2	-65.34	396.8	232.3	251.8	233.7	18.12	13.899			
4,400.0	4,388.9	4,394.3	4,364.8	9.3	11.5	-65.03	406.8	239.4	258.1	239.6	18.53	13.933			
4,500.0	4,488.6	4,494.1	4,463.8	9.6	11.8	-64.73	416.8	246.6	264.4	245.5	18.93	13.965			
4,600.0	4,588.4	4,593.8	4,562.8	9.8	12.0	-64.44	426.8	253.8	270.7	251.3	19.34	13.997			
4,700.0	4,688.1	4,693.6	4,661.8	10.0	12.3	-64.17	436.8	261.0	277.0	257.2	19.74	14.028			
4,800.0	4,787.8	4,793.4	4,760.9	10.2	12.6	-63.91	446.8	268.2	283.3	263.1	20.15	14.058			
4,900.0	4,887.6	4,893.2	4,859.9	10.4	12.9	-63.66	456.8	275.4	289.6	269.0	20.56	14.087			
5,000.0	4,987.3	4,993.0	4,958.9	10.6	13.1	-63.42	466.8	282.6	295.9	274.9	20.96	14.115			
5,100.0	5,087.0	5,092.8	5,058.0	10.9	13.4	-63.19	476.8	289.8	302.2	280.8	21.37	14.143			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
5,200.0	5,186.7	5,196.7	5,161.1	11.1	13.7	-63.01	486.9	297.0	308.2	286.4	21.78	14.151			
5,300.0	5,286.5	5,305.9	5,269.9	11.3	13.9	-63.23	494.6	302.6	311.7	289.5	22.22	14.030			
5,400.0	5,386.3	5,415.1	5,378.9	11.5	14.1	-63.61	499.0	305.7	313.1	290.5	22.60	13.853			
5,500.0	5,486.3	5,522.6	5,486.4	11.6	14.2	116.47	500.1	306.5	313.5	290.6	22.90	13.689			
5,600.0	5,586.3	5,623.2	5,587.0	11.8	14.3	116.48	499.9	306.2	313.5	290.3	23.19	13.522			
5,700.0	5,686.3	5,723.3	5,687.2	11.9	14.4	116.48	499.6	305.7	313.5	290.1	23.47	13.358			
5,800.0	5,786.3	5,823.3	5,787.2	12.0	14.6	116.48	499.3	305.2	313.5	289.8	23.76	13.197			
5,900.0	5,886.3	5,923.3	5,887.2	12.2	14.7	116.48	499.0	304.6	313.5	289.5	24.05	13.039			
6,000.0	5,986.3	6,023.3	5,987.2	12.3	14.8	116.48	498.7	304.1	313.5	289.2	24.33	12.884			
6,100.0	6,086.3	6,123.3	6,087.2	12.5	14.9	116.48	498.4	303.5	313.5	288.9	24.63	12.731			
6,200.0	6,186.3	6,223.3	6,187.2	12.6	15.0	116.48	498.1	303.0	313.5	288.6	24.92	12.582			
6,300.0	6,286.3	6,323.3	6,287.2	12.7	15.1	116.48	497.8	302.5	313.5	288.3	25.21	12.435			
6,400.0	6,386.3	6,423.3	6,387.2	12.9	15.3	116.48	497.4	301.9	313.5	288.0	25.51	12.291			
6,500.0	6,486.3	6,523.3	6,487.2	13.0	15.4	116.48	497.1	301.4	313.5	287.7	25.80	12.150			
6,600.0	6,586.3	6,623.3	6,587.2	13.2	15.5	116.48	496.8	300.8	313.5	287.4	26.10	12.011			
6,700.0	6,686.3	6,723.3	6,687.2	13.3	15.6	116.48	496.5	300.3	313.5	287.1	26.40	11.875			
6,800.0	6,786.3	6,823.3	6,787.2	13.5	15.8	116.48	496.2	299.7	313.5	286.8	26.70	11.741			
6,900.0	6,886.3	6,923.3	6,887.1	13.6	15.9	116.48	495.9	299.2	313.5	286.5	27.00	11.610			
7,000.0	6,986.3	7,023.3	6,987.1	13.8	16.0	116.47	495.6	298.7	313.5	286.2	27.31	11.481			
7,100.0	7,086.3	7,123.3	7,087.1	13.9	16.1	116.47	495.2	298.1	313.5	285.9	27.61	11.355			
7,200.0	7,186.3	7,223.3	7,187.1	14.1	16.3	116.47	494.9	297.6	313.5	285.6	27.92	11.230			
7,300.0	7,286.3	7,323.3	7,287.1	14.2	16.4	116.47	494.6	297.0	313.5	285.3	28.22	11.109			
7,400.0	7,386.3	7,423.3	7,387.1	14.4	16.5	116.47	494.3	296.5	313.5	285.0	28.53	10.989			
7,500.0	7,486.3	7,523.3	7,487.1	14.5	16.7	116.47	494.0	295.9	313.5	284.7	28.84	10.872			
7,600.0	7,586.3	7,623.3	7,587.1	14.7	16.8	116.47	493.7	295.4	313.5	284.4	29.15	10.756			
7,700.0	7,686.3	7,723.3	7,687.1	14.8	16.9	116.47	493.4	294.9	313.5	284.1	29.46	10.643			
7,800.0	7,786.3	7,823.3	7,787.1	15.0	17.0	116.47	493.0	294.3	313.5	283.7	29.77	10.532			
7,900.0	7,886.3	7,923.3	7,887.1	15.1	17.2	116.47	492.7	293.8	313.5	283.4	30.08	10.423			
8,000.0	7,986.3	8,023.3	7,987.1	15.3	17.3	116.47	492.4	293.2	313.5	283.1	30.39	10.316			
8,100.0	8,086.2	8,123.3	8,087.1	15.5	17.5	116.47	492.1	292.7	313.5	282.8	30.71	10.210			
8,200.0	8,186.2	8,223.3	8,187.1	15.6	17.6	116.47	491.8	292.1	313.5	282.5	31.02	10.107			
8,300.0	8,286.2	8,323.3	8,287.1	15.8	17.7	116.47	491.5	291.6	313.5	282.2	31.33	10.006			
8,400.0	8,386.2	8,423.3	8,387.1	15.9	17.9	116.47	491.2	291.1	313.5	281.9	31.65	9.906			
8,500.0	8,486.2	8,523.3	8,487.1	16.1	18.0	116.47	490.9	290.5	313.5	281.5	31.97	9.808			
8,600.0	8,586.2	8,623.3	8,587.1	16.2	18.1	116.47	490.5	290.0	313.5	281.2	32.28	9.711			
8,700.0	8,686.2	8,723.3	8,687.1	16.4	18.3	116.47	490.2	289.4	313.5	280.9	32.60	9.617			
8,800.0	8,786.2	8,823.3	8,787.1	16.5	18.4	116.47	489.9	288.9	313.5	280.6	32.92	9.524			
8,900.0	8,886.2	8,923.3	8,887.1	16.7	18.6	116.47	489.6	288.3	313.5	280.3	33.24	9.433			
9,000.0	8,986.2	9,023.3	8,987.1	16.9	18.7	116.47	489.3	287.8	313.5	280.0	33.56	9.343			
9,100.0	9,086.2	9,123.3	9,087.1	17.0	18.8	116.47	489.0	287.3	313.5	279.6	33.88	9.254			
9,200.0	9,186.2	9,223.3	9,187.1	17.2	19.0	116.47	488.7	286.7	313.5	279.3	34.20	9.168			
9,300.0	9,286.2	9,323.3	9,287.1	17.3	19.1	116.47	488.3	286.2	313.5	279.0	34.52	9.082			
9,400.0	9,386.2	9,423.3	9,387.1	17.5	19.3	116.47	488.0	285.6	313.5	278.7	34.84	8.998			
9,500.0	9,486.2	9,523.3	9,487.1	17.7	19.4	116.47	487.7	285.1	313.5	278.4	35.16	8.916			
9,600.0	9,586.2	9,623.3	9,587.1	17.8	19.6	116.47	487.4	284.5	313.5	278.0	35.49	8.835			
9,700.0	9,686.2	9,723.3	9,687.1	18.0	19.7	116.47	487.1	284.0	313.5	277.7	35.81	8.755			
9,800.0	9,786.2	9,823.3	9,787.1	18.1	19.8	116.47	486.8	283.5	313.5	277.4	36.13	8.677			
9,900.0	9,886.2	9,923.3	9,887.1	18.3	20.0	116.47	486.5	282.9	313.5	277.1	36.46	8.599			
10,000.0	9,986.2	10,023.3	9,987.1	18.5	20.1	116.47	486.1	282.4	313.5	276.7	36.78	8.523			
10,100.0	10,086.2	10,123.3	10,087.1	18.6	20.3	116.47	485.8	281.8	313.5	276.4	37.11	8.449			
10,200.0	10,186.2	10,223.3	10,187.1	18.8	20.4	116.47	485.5	281.3	313.5	276.1	37.43	8.375			
10,300.0	10,286.2	10,323.3	10,287.1	18.9	20.6	116.47	485.2	280.7	313.5	275.8	37.76	8.303			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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		
10,400.0	10,386.2	10,423.3	10,387.1	19.1	20.7	116.47	484.9	280.2	313.5	275.4	38.09	8.232			
10,500.0	10,486.2	10,523.3	10,487.1	19.3	20.9	116.47	484.6	279.7	313.5	275.1	38.41	8.162			
10,600.0	10,586.2	10,623.3	10,587.1	19.4	21.0	116.47	484.3	279.1	313.5	274.8	38.74	8.093			
10,700.0	10,686.2	10,723.3	10,687.1	19.6	21.2	116.47	484.0	278.6	313.5	274.4	39.07	8.025			
10,800.0	10,786.2	10,823.3	10,787.1	19.8	21.3	116.47	483.6	278.0	313.5	274.1	39.40	7.958			
10,900.0	10,886.2	10,923.3	10,887.1	19.9	21.5	116.47	483.3	277.5	313.5	273.8	39.72	7.892			
11,000.0	10,986.2	11,023.3	10,987.1	20.1	21.6	116.47	483.0	276.9	313.5	273.5	40.05	7.827			
11,100.0	11,086.2	11,123.3	11,087.1	20.2	21.8	116.47	482.7	276.4	313.5	273.1	40.38	7.764			
11,200.0	11,186.2	11,223.3	11,187.1	20.4	21.9	116.47	482.4	275.9	313.5	272.8	40.71	7.701			
11,300.0	11,286.2	11,323.3	11,287.1	20.6	22.1	116.47	482.1	275.3	313.5	272.5	41.04	7.639			
11,400.0	11,386.2	11,423.3	11,387.1	20.7	22.2	116.47	481.8	274.8	313.5	272.1	41.37	7.578			
11,500.0	11,486.2	11,523.3	11,487.1	20.9	22.4	116.47	481.4	274.2	313.5	271.8	41.70	7.518			
11,600.0	11,586.2	11,623.3	11,587.1	21.1	22.5	116.47	481.1	273.7	313.5	271.5	42.03	7.459			
11,700.0	11,686.2	11,723.3	11,687.1	21.2	22.7	116.47	480.8	273.1	313.5	271.1	42.36	7.400			
11,800.0	11,786.2	11,823.3	11,787.1	21.4	22.8	116.47	480.5	272.6	313.5	270.8	42.70	7.343			
11,900.0	11,886.2	11,923.3	11,887.1	21.6	23.0	116.47	480.2	272.1	313.5	270.5	43.03	7.286			
11,924.8	11,911.0	11,948.2	11,911.9	21.6	23.0	116.47	480.1	271.9	313.5	270.4	43.11	7.272 SF			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	-71.63	23.7	-71.3	75.1						
100.0	100.0	100.0	100.0	0.1	0.1	-71.63	23.7	-71.3	75.1	74.8	0.30	253.167			
200.0	200.0	200.0	200.0	0.3	0.3	-71.63	23.7	-71.3	75.1	74.5	0.65	116.320	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-132.95	23.7	-71.3	76.6	75.6	1.00	76.768			
400.0	399.8	399.4	399.4	0.7	0.7	-134.95	25.4	-71.1	81.3	79.9	1.36	59.740			
500.0	499.5	498.8	498.7	0.9	0.9	-134.99	30.5	-70.4	87.2	85.4	1.74	50.068			
600.0	599.2	598.1	597.5	1.1	1.1	-132.93	39.0	-69.3	93.6	91.5	2.15	43.490			
700.0	698.9	696.9	695.7	1.3	1.3	-129.24	50.9	-67.8	100.9	98.3	2.60	38.755			
800.0	798.7	795.3	792.8	1.5	1.6	-124.38	66.0	-65.9	109.7	106.6	3.09	35.458			
900.0	898.4	894.3	890.5	1.8	1.9	-119.65	82.5	-63.8	119.6	116.0	3.59	33.325			
1,000.0	998.1	993.4	988.1	2.0	2.3	-115.65	99.0	-61.7	130.1	126.1	4.08	31.909			
1,100.0	1,097.9	1,092.5	1,085.8	2.2	2.6	-112.27	115.5	-59.7	141.3	136.7	4.56	30.958			
1,200.0	1,197.6	1,191.5	1,183.4	2.4	2.9	-109.39	132.0	-57.6	152.8	147.8	5.04	30.312			
1,300.0	1,297.3	1,290.6	1,281.1	2.6	3.2	-106.91	148.5	-55.5	164.7	159.2	5.51	29.873			
1,400.0	1,397.0	1,389.6	1,378.7	2.8	3.6	-104.77	165.0	-53.4	176.8	170.9	5.98	29.575			
1,500.0	1,496.8	1,488.7	1,476.4	3.1	3.9	-102.91	181.5	-51.3	189.2	182.7	6.44	29.376			
1,600.0	1,596.5	1,587.8	1,574.0	3.3	4.2	-101.27	198.0	-49.2	201.7	194.8	6.90	29.247			
1,700.0	1,696.2	1,686.8	1,671.7	3.5	4.6	-99.83	214.5	-47.1	214.4	207.0	7.35	29.167			
1,800.0	1,796.0	1,785.9	1,769.3	3.7	4.9	-98.55	231.0	-45.0	227.2	219.4	7.80	29.124			
1,900.0	1,895.7	1,884.9	1,867.0	3.9	5.2	-97.40	247.5	-42.9	240.0	231.8	8.25	29.106			
2,000.0	1,995.4	1,984.0	1,964.6	4.1	5.6	-96.38	264.0	-40.8	253.0	244.3	8.69	29.108			
2,100.0	2,095.1	2,083.0	2,062.3	4.4	5.9	-95.45	280.6	-38.8	266.1	256.9	9.14	29.124			
2,200.0	2,194.9	2,182.1	2,160.0	4.6	6.2	-94.61	297.1	-36.7	279.2	269.6	9.58	29.149			
2,300.0	2,294.6	2,281.2	2,257.6	4.8	6.6	-93.84	313.6	-34.6	292.3	282.3	10.02	29.182			
2,400.0	2,394.3	2,380.2	2,355.3	5.0	6.9	-93.14	330.1	-32.5	305.5	295.1	10.46	29.221			
2,500.0	2,494.1	2,479.3	2,452.9	5.2	7.2	-92.50	346.6	-30.4	318.8	307.9	10.89	29.262			
2,600.0	2,593.8	2,578.3	2,550.6	5.4	7.6	-91.91	363.1	-28.3	332.1	320.7	11.33	29.306			
2,700.0	2,693.5	2,677.4	2,648.2	5.7	7.9	-91.37	379.6	-26.2	345.4	333.6	11.77	29.352			
2,800.0	2,793.3	2,776.5	2,745.9	5.9	8.2	-90.86	396.1	-24.1	358.7	346.5	12.20	29.399			
2,900.0	2,893.0	2,875.5	2,843.5	6.1	8.6	-90.39	412.6	-22.0	372.1	359.5	12.64	29.446			
3,000.0	2,992.7	2,974.6	2,941.2	6.3	8.9	-89.96	429.1	-19.9	385.5	372.4	13.07	29.492			
3,100.0	3,092.4	3,073.6	3,038.8	6.5	9.3	-89.55	445.6	-17.8	398.9	385.4	13.50	29.539			
3,200.0	3,192.2	3,172.7	3,136.5	6.7	9.6	-89.17	462.1	-15.8	412.3	398.4	13.94	29.585			
3,300.0	3,291.9	3,271.7	3,234.1	7.0	9.9	-88.81	478.6	-13.7	425.8	411.4	14.37	29.630			
3,400.0	3,391.6	3,370.8	3,331.8	7.2	10.3	-88.48	495.1	-11.6	439.2	424.4	14.80	29.674			
3,500.0	3,491.4	3,469.9	3,429.4	7.4	10.6	-88.16	511.6	-9.5	452.7	437.5	15.23	29.717			
3,600.0	3,591.1	3,568.9	3,527.1	7.6	10.9	-87.87	528.1	-7.4	466.2	450.5	15.67	29.760			
3,700.0	3,690.8	3,668.0	3,624.7	7.8	11.3	-87.59	544.6	-5.3	479.7	463.6	16.10	29.801			
3,800.0	3,790.5	3,767.0	3,722.4	8.0	11.6	-87.32	561.1	-3.2	493.2	476.7	16.53	29.841			
3,900.0	3,890.3	3,866.1	3,820.0	8.3	12.0	-87.07	577.6	-1.1	506.7	489.8	16.96	29.881			
4,000.0	3,990.0	3,965.1	3,917.7	8.5	12.3	-86.84	594.1	1.0	520.3	502.9	17.39	29.919			
4,100.0	4,089.7	4,064.2	4,015.3	8.7	12.6	-86.61	610.6	3.1	533.8	516.0	17.82	29.956			
4,200.0	4,189.5	4,163.3	4,113.0	8.9	13.0	-86.40	627.1	5.1	547.4	529.1	18.25	29.992			
4,300.0	4,289.2	4,262.3	4,210.6	9.1	13.3	-86.19	643.6	7.2	560.9	542.2	18.68	30.027			
4,400.0	4,388.9	4,361.4	4,308.3	9.3	13.6	-86.00	660.1	9.3	574.5	555.4	19.11	30.061			
4,500.0	4,488.6	4,460.4	4,405.9	9.6	14.0	-85.82	676.6	11.4	588.0	568.5	19.54	30.094			
4,600.0	4,588.4	4,559.5	4,503.6	9.8	14.3	-85.64	693.1	13.5	601.6	581.6	19.97	30.126			
4,700.0	4,688.1	4,658.6	4,601.2	10.0	14.7	-85.47	709.6	15.6	615.2	594.8	20.40	30.158			
4,800.0	4,787.8	4,757.6	4,698.9	10.2	15.0	-85.31	726.1	17.7	628.8	607.9	20.83	30.188			
4,900.0	4,887.6	4,856.7	4,796.5	10.4	15.3	-85.15	742.6	19.8	642.3	621.1	21.26	30.218			
5,000.0	4,987.3	4,955.7	4,894.2	10.6	15.7	-85.00	759.1	21.9	655.9	634.3	21.69	30.246			
5,100.0	5,087.0	5,054.8	4,991.8	10.9	16.0	-84.86	775.6	24.0	669.5	647.4	22.12	30.274			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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		
5,200.0	5,186.7	5,173.0	5,108.6	11.1	16.4	-84.77	793.8	26.3	682.1	659.5	22.58	30.212			
5,300.0	5,286.5	5,297.9	5,232.7	11.3	16.7	-84.91	807.8	28.0	691.1	668.0	23.05	29.978			
5,400.0	5,386.3	5,423.5	5,358.0	11.5	16.9	-85.21	816.6	29.1	696.5	673.1	23.47	29.672			
5,500.0	5,486.3	5,549.3	5,483.8	11.6	17.0	94.92	819.9	29.6	698.6	674.8	23.80	29.353			
5,600.0	5,586.3	5,652.1	5,586.5	11.8	17.1	94.94	819.8	29.4	698.7	674.6	24.08	29.018			
5,700.0	5,686.3	5,752.2	5,686.7	11.9	17.2	94.94	819.5	28.9	698.7	674.3	24.35	28.694			
5,800.0	5,786.3	5,852.2	5,786.7	12.0	17.3	94.94	819.2	28.4	698.7	674.1	24.62	28.375			
5,900.0	5,886.3	5,952.2	5,886.7	12.2	17.4	94.94	818.9	27.8	698.7	673.8	24.90	28.060			
6,000.0	5,986.3	6,052.2	5,986.7	12.3	17.5	94.94	818.6	27.3	698.7	673.5	25.18	27.750			
6,100.0	6,086.3	6,152.2	6,086.7	12.5	17.6	94.94	818.3	26.7	698.7	673.2	25.46	27.445			
6,200.0	6,186.3	6,252.2	6,186.7	12.6	17.7	94.94	817.9	26.2	698.7	672.9	25.74	27.145			
6,300.0	6,286.3	6,352.2	6,286.7	12.7	17.8	94.94	817.6	25.7	698.7	672.7	26.02	26.849			
6,400.0	6,386.3	6,452.2	6,386.7	12.9	17.9	94.94	817.3	25.1	698.7	672.4	26.31	26.559			
6,500.0	6,486.3	6,552.2	6,486.7	13.0	18.0	94.94	817.0	24.6	698.7	672.1	26.59	26.273			
6,600.0	6,586.3	6,652.2	6,586.7	13.2	18.1	94.94	816.7	24.0	698.7	671.8	26.88	25.991			
6,700.0	6,686.3	6,752.2	6,686.6	13.3	18.2	94.94	816.4	23.5	698.7	671.5	27.17	25.715			
6,800.0	6,786.3	6,852.2	6,786.6	13.5	18.3	94.94	816.1	22.9	698.7	671.2	27.46	25.442			
6,900.0	6,886.3	6,952.2	6,886.6	13.6	18.5	94.94	815.7	22.4	698.7	670.9	27.75	25.175			
7,000.0	6,986.3	7,052.2	6,986.6	13.8	18.6	94.94	815.4	21.9	698.7	670.6	28.05	24.911			
7,100.0	7,086.3	7,152.2	7,086.6	13.9	18.7	94.94	815.1	21.3	698.7	670.3	28.34	24.652			
7,200.0	7,186.3	7,252.2	7,186.6	14.1	18.8	94.94	814.8	20.8	698.7	670.1	28.64	24.398			
7,300.0	7,286.3	7,352.2	7,286.6	14.2	18.9	94.94	814.5	20.2	698.7	669.8	28.93	24.147			
7,400.0	7,386.3	7,452.2	7,386.6	14.4	19.0	94.94	814.2	19.7	698.7	669.5	29.23	23.901			
7,500.0	7,486.3	7,552.2	7,486.6	14.5	19.1	94.94	813.9	19.1	698.7	669.2	29.53	23.659			
7,600.0	7,586.3	7,652.2	7,586.6	14.7	19.2	94.94	813.6	18.6	698.7	668.9	29.83	23.420			
7,700.0	7,686.3	7,752.2	7,686.6	14.8	19.4	94.94	813.2	18.1	698.7	668.6	30.13	23.186			
7,800.0	7,786.3	7,852.2	7,786.6	15.0	19.5	94.94	812.9	17.5	698.7	668.3	30.44	22.955			
7,900.0	7,886.3	7,952.2	7,886.6	15.1	19.6	94.94	812.6	17.0	698.7	668.0	30.74	22.729			
8,000.0	7,986.3	8,052.2	7,986.6	15.3	19.7	94.94	812.3	16.4	698.7	667.6	31.04	22.506			
8,100.0	8,086.2	8,152.2	8,086.6	15.5	19.8	94.94	812.0	15.9	698.7	667.3	31.35	22.287			
8,200.0	8,186.2	8,252.2	8,186.6	15.6	20.0	94.94	811.7	15.3	698.7	667.0	31.66	22.071			
8,300.0	8,286.2	8,352.2	8,286.6	15.8	20.1	94.94	811.4	14.8	698.7	666.7	31.96	21.859			
8,400.0	8,386.2	8,452.2	8,386.6	15.9	20.2	94.94	811.1	14.3	698.7	666.4	32.27	21.650			
8,500.0	8,486.2	8,552.2	8,486.6	16.1	20.3	94.94	810.7	13.7	698.7	666.1	32.58	21.445			
8,600.0	8,586.2	8,652.2	8,586.6	16.2	20.4	94.94	810.4	13.2	698.7	665.8	32.89	21.243			
8,700.0	8,686.2	8,752.2	8,686.6	16.4	20.6	94.94	810.1	12.6	698.7	665.5	33.20	21.044			
8,800.0	8,786.2	8,852.2	8,786.6	16.5	20.7	94.94	809.8	12.1	698.7	665.2	33.51	20.849			
8,900.0	8,886.2	8,952.2	8,886.6	16.7	20.8	94.94	809.5	11.5	698.7	664.9	33.83	20.656			
9,000.0	8,986.2	9,052.2	8,986.6	16.9	21.0	94.94	809.2	11.0	698.7	664.6	34.14	20.467			
9,100.0	9,086.2	9,152.2	9,086.6	17.0	21.1	94.94	808.9	10.5	698.7	664.2	34.45	20.281			
9,200.0	9,186.2	9,252.2	9,186.6	17.2	21.2	94.94	808.5	9.9	698.7	663.9	34.77	20.097			
9,300.0	9,286.2	9,352.2	9,286.6	17.3	21.3	94.94	808.2	9.4	698.7	663.6	35.08	19.917			
9,400.0	9,386.2	9,452.2	9,386.6	17.5	21.5	94.94	807.9	8.8	698.7	663.3	35.40	19.739			
9,500.0	9,486.2	9,552.2	9,486.6	17.7	21.6	94.94	807.6	8.3	698.7	663.0	35.71	19.565			
9,600.0	9,586.2	9,652.2	9,586.6	17.8	21.7	94.94	807.3	7.7	698.7	662.7	36.03	19.393			
9,700.0	9,686.2	9,752.2	9,686.6	18.0	21.9	94.94	807.0	7.2	698.7	662.4	36.35	19.223			
9,800.0	9,786.2	9,852.2	9,786.6	18.1	22.0	94.94	806.7	6.7	698.7	662.0	36.66	19.057			
9,900.0	9,886.2	9,952.2	9,886.6	18.3	22.1	94.94	806.4	6.1	698.7	661.7	36.98	18.892			
10,000.0	9,986.2	10,052.2	9,986.6	18.5	22.3	94.94	806.0	5.6	698.7	661.4	37.30	18.731			
10,100.0	10,086.2	10,152.2	10,086.6	18.6	22.4	94.94	805.7	5.0	698.7	661.1	37.62	18.572			
10,200.0	10,186.2	10,252.2	10,186.6	18.8	22.5	94.94	805.4	4.5	698.7	660.8	37.94	18.415			
10,300.0	10,286.2	10,352.2	10,286.6	18.9	22.7	94.94	805.1	3.9	698.7	660.4	38.26	18.261			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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		
10,400.0	10,386.2	10,452.2	10,386.6	19.1	22.8	94.94	804.8	3.4	698.7	660.1	38.58	18.109			
10,500.0	10,486.2	10,552.2	10,486.6	19.3	22.9	94.94	804.5	2.9	698.7	659.8	38.91	17.959			
10,600.0	10,586.2	10,652.2	10,586.6	19.4	23.1	94.94	804.2	2.3	698.7	659.5	39.23	17.811			
10,700.0	10,686.2	10,752.2	10,686.6	19.6	23.2	94.94	803.9	1.8	698.7	659.2	39.55	17.666			
10,800.0	10,786.2	10,852.2	10,786.6	19.8	23.3	94.94	803.5	1.2	698.7	658.8	39.87	17.523			
10,900.0	10,886.2	10,952.2	10,886.6	19.9	23.5	94.94	803.2	0.7	698.7	658.5	40.20	17.382			
11,000.0	10,986.2	11,052.2	10,986.6	20.1	23.6	94.94	802.9	0.1	698.7	658.2	40.52	17.243			
11,100.0	11,086.2	11,152.2	11,086.6	20.2	23.8	94.94	802.6	-0.4	698.7	657.9	40.85	17.106			
11,200.0	11,186.2	11,252.2	11,186.6	20.4	23.9	94.94	802.3	-0.9	698.7	657.5	41.17	16.971			
11,300.0	11,286.2	11,352.2	11,286.6	20.6	24.0	94.94	802.0	-1.5	698.7	657.2	41.50	16.838			
11,400.0	11,386.2	11,452.2	11,386.6	20.7	24.2	94.94	801.7	-2.0	698.7	656.9	41.82	16.707			
11,500.0	11,486.2	11,552.2	11,486.6	20.9	24.3	94.94	801.3	-2.6	698.7	656.6	42.15	16.578			
11,600.0	11,586.2	11,652.2	11,586.6	21.1	24.5	94.94	801.0	-3.1	698.7	656.2	42.47	16.450			
11,700.0	11,686.2	11,752.2	11,686.6	21.2	24.6	94.94	800.7	-3.7	698.7	655.9	42.80	16.325			
11,800.0	11,786.2	11,852.2	11,786.5	21.4	24.7	94.94	800.4	-4.2	698.7	655.6	43.13	16.201			
11,900.0	11,886.2	11,952.2	11,886.5	21.6	24.9	94.94	800.1	-4.8	698.7	655.3	43.46	16.079			
11,924.8	11,911.0	11,977.1	11,911.4	21.6	24.9	94.94	800.0	-4.9	698.7	655.2	43.54	16.049 SF			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft							
Survey Program: 140-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	-71.73	38.2	-115.8	122.0												
100.0	100.0	96.6	96.6	0.1	0.2	-71.89	37.8	-115.7	121.7	121.4	0.30	399.208									
200.0	200.0	197.2	197.2	0.3	0.3	-72.41	36.6	-115.3	120.9	120.3	0.65	185.860									
237.2	237.2	234.6	234.6	0.4	0.4	-132.91	35.9	-115.1	120.7	120.0	0.78	154.336	CC, ES								
300.0	300.0	297.6	297.5	0.5	0.5	-134.11	34.5	-114.7	121.3	120.3	1.01	120.591									
400.0	399.8	397.5	397.4	0.7	0.7	-137.09	32.2	-113.8	124.4	123.0	1.37	90.866									
500.0	499.5	497.3	497.2	0.9	0.9	-140.10	30.2	-113.0	128.8	127.0	1.73	74.233									
600.0	599.2	597.2	597.1	1.1	1.1	-143.45	27.0	-112.1	133.1	131.0	2.10	63.316									
700.0	698.9	697.6	697.4	1.3	1.2	-147.09	22.5	-111.0	137.7	135.2	2.48	55.619									
800.0	798.7	798.9	798.5	1.5	1.4	-150.98	16.8	-108.8	141.8	139.0	2.85	49.702									
900.0	898.4	900.7	900.0	1.8	1.7	-155.00	10.3	-105.2	145.1	141.9	3.24	44.843									
1,000.0	998.1	1,002.9	1,001.8	2.0	1.9	-159.00	3.6	-99.7	147.4	143.8	3.62	40.695									
1,100.0	1,097.9	1,104.2	1,102.6	2.2	2.1	-162.95	-3.0	-92.8	148.8	144.8	4.01	37.060									
1,200.0	1,197.6	1,201.3	1,199.3	2.4	2.3	-166.68	-9.3	-85.9	150.7	146.3	4.40	34.280									
1,300.0	1,297.3	1,298.8	1,296.5	2.6	2.5	-169.82	-15.1	-81.2	155.1	150.4	4.77	32.516									
1,400.0	1,397.0	1,396.8	1,394.3	2.8	2.7	-172.50	-20.4	-77.6	161.0	155.8	5.15	31.284									
1,500.0	1,496.8	1,494.6	1,491.8	3.1	3.0	-175.21	-26.8	-74.7	168.2	162.6	5.54	30.358									
1,600.0	1,596.5	1,596.3	1,593.2	3.3	3.2	-178.06	-34.2	-71.4	175.9	170.0	5.93	29.675									
1,700.0	1,696.2	1,697.9	1,694.6	3.5	3.4	179.82	-39.3	-67.3	182.1	175.8	6.31	28.881									
1,800.0	1,796.0	1,797.3	1,793.9	3.7	3.6	178.15	-43.4	-63.4	188.2	181.5	6.68	28.192									
1,900.0	1,895.7	1,895.0	1,891.5	3.9	3.7	176.93	-46.9	-60.7	195.2	188.1	7.03	27.748									
2,000.0	1,995.4	1,995.4	1,991.8	4.1	3.9	175.76	-50.6	-58.2	202.5	195.1	7.41	27.336									
2,100.0	2,095.1	2,095.3	2,091.5	4.4	4.1	174.43	-54.9	-54.9	209.6	201.8	7.79	26.924									
2,200.0	2,194.9	2,195.3	2,191.3	4.6	4.3	173.12	-59.4	-51.4	216.8	208.6	8.16	26.557									
2,300.0	2,294.6	2,294.7	2,290.6	4.8	4.5	171.96	-63.5	-48.0	223.8	215.3	8.54	26.218									
2,400.0	2,394.3	2,395.6	2,391.4	5.0	4.7	170.92	-67.5	-44.5	230.9	222.0	8.91	25.898									
2,500.0	2,494.1	2,493.9	2,489.5	5.2	4.9	169.97	-71.3	-41.2	237.9	228.6	9.29	25.624									
2,600.0	2,593.8	2,595.0	2,590.5	5.4	5.1	169.22	-74.7	-38.2	245.1	235.4	9.65	25.381									
2,700.0	2,693.5	2,694.4	2,689.9	5.7	5.3	168.57	-77.7	-35.2	252.0	242.0	10.02	25.150									
2,800.0	2,793.3	2,794.7	2,790.0	5.9	5.5	168.08	-80.3	-32.6	259.0	248.6	10.38	24.946									
2,900.0	2,893.0	2,895.7	2,891.0	6.1	5.7	167.69	-82.4	-29.9	265.6	254.9	10.74	24.723									
3,000.0	2,992.7	2,994.0	2,989.3	6.3	5.8	167.43	-84.1	-27.7	272.3	261.2	11.10	24.539									
3,100.0	3,092.4	3,094.8	3,090.1	6.5	6.0	167.21	-85.7	-25.5	279.0	267.5	11.45	24.360									
3,200.0	3,192.2	3,192.9	3,188.1	6.7	6.2	167.03	-87.4	-23.6	285.9	274.1	11.80	24.223									
3,300.0	3,291.9	3,290.9	3,286.1	7.0	6.4	166.89	-89.3	-22.3	293.4	281.2	12.15	24.146									
3,400.0	3,391.6	3,390.3	3,385.4	7.2	6.5	166.82	-91.3	-21.4	301.3	288.8	12.50	24.108									
3,500.0	3,491.4	3,491.2	3,486.4	7.4	6.7	166.72	-93.3	-20.3	309.0	296.1	12.85	24.038									
3,600.0	3,591.1	3,587.7	3,582.8	7.6	6.9	166.61	-95.2	-19.1	316.6	303.4	13.20	23.987									
3,700.0	3,690.8	3,682.3	3,677.4	7.8	7.1	166.50	-98.4	-19.2	326.2	312.7	13.54	24.084									
3,800.0	3,790.5	3,781.8	3,776.7	8.0	7.2	166.41	-102.0	-19.8	336.3	322.4	13.89	24.202									
3,900.0	3,890.3	3,881.8	3,876.8	8.3	7.4	166.39	-105.3	-20.6	346.3	332.0	14.24	24.311									
4,000.0	3,990.0	3,982.8	3,977.7	8.5	7.6	166.40	-108.4	-21.4	356.0	341.4	14.59	24.396									
4,100.0	4,089.7	4,083.0	4,077.9	8.7	7.7	166.48	-110.8	-22.1	365.3	350.4	14.94	24.459									
4,200.0	4,189.5	4,183.9	4,178.7	8.9	7.9	166.61	-112.8	-23.0	374.5	359.2	15.28	24.509									
4,300.0	4,289.2	4,285.0	4,279.8	9.1	8.1	166.73	-114.6	-23.5	383.3	367.6	15.62	24.539									
4,400.0	4,388.9	4,385.7	4,380.5	9.3	8.3	166.88	-116.0	-24.0	391.7	375.7	15.97	24.532									
4,500.0	4,488.6	4,484.9	4,479.7	9.6	8.4	167.06	-117.0	-24.5	400.0	383.7	16.30	24.535									
4,600.0	4,588.4	4,585.8	4,580.6	9.8	8.6	167.27	-117.9	-25.3	408.4	391.7	16.64	24.540									
4,700.0	4,688.1	4,687.3	4,682.1	10.0	8.7	167.56	-118.1	-26.1	416.2	399.2	16.98	24.517									
4,800.0	4,787.8	4,787.7	4,782.5	10.2	8.9	167.86	-117.8	-26.8	423.8	406.5	17.31	24.483									
4,900.0	4,887.6	4,887.0	4,881.8	10.4	9.1	168.16	-117.6	-27.5	431.3	413.7	17.64	24.450									
5,000.0	4,987.3	4,986.3	4,981.0	10.6	9.2	168.44	-117.4	-28.3	439.0	421.0	17.97	24.425									

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 140-MWD													Offset Well Error:		0.0 ft	
Reference													Distance		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning			
		Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)								
5,100.0	5,087.0	5,085.7	5,080.5	10.9	9.4	168.74	-117.1	-29.3	446.8	428.5	18.30	24.407				
5,200.0	5,186.7	5,185.4	5,180.1	11.1	9.5	169.06	-116.7	-30.4	454.6	435.9	18.64	24.392				
5,300.0	5,286.5	5,285.0	5,279.7	11.3	9.7	169.37	-116.2	-31.6	462.4	443.4	18.97	24.378				
5,400.0	5,386.3	5,380.5	5,375.2	11.5	9.9	169.63	-116.1	-33.0	468.8	449.5	19.31	24.281				
5,500.0	5,486.3	5,477.3	5,472.0	11.6	10.0	-10.10	-116.8	-34.8	471.9	452.3	19.63	24.040				
5,600.0	5,586.3	5,576.4	5,571.1	11.8	10.2	-9.98	-117.4	-37.1	473.7	453.7	19.96	23.731				
5,700.0	5,686.3	5,672.8	5,667.4	11.9	10.3	-10.00	-119.2	-39.2	476.0	455.7	20.30	23.449				
5,800.0	5,786.3	5,773.6	5,768.2	12.0	10.5	-10.05	-121.5	-41.3	478.4	457.8	20.64	23.179				
5,900.0	5,886.3	5,875.6	5,870.2	12.2	10.7	-10.05	-123.2	-43.5	480.5	459.5	20.98	22.898				
6,000.0	5,986.3	5,977.0	5,971.6	12.3	10.9	-10.07	-124.7	-45.4	482.3	460.9	21.33	22.612				
6,100.0	6,086.3	6,079.4	6,073.9	12.5	11.0	-10.10	-126.2	-46.8	483.7	462.0	21.68	22.314				
6,200.0	6,186.3	6,181.5	6,176.0	12.6	11.2	-10.14	-127.4	-47.8	484.5	462.5	22.02	22.003				
6,300.0	6,286.3	6,283.2	6,277.7	12.7	11.4	-10.17	-128.2	-48.6	485.0	462.7	22.37	21.686				
6,400.0	6,386.3	6,382.9	6,377.4	12.9	11.6	-10.16	-128.7	-49.4	485.3	462.6	22.71	21.375				
6,500.0	6,486.3	6,480.9	6,475.4	13.0	11.7	-10.13	-129.1	-50.6	485.9	462.9	23.04	21.088				
6,600.0	6,586.3	6,579.0	6,573.5	13.2	11.9	-10.05	-129.6	-52.3	486.9	463.6	23.38	20.829				
6,700.0	6,686.3	6,680.7	6,675.2	13.3	12.1	-9.95	-129.9	-54.2	488.0	464.3	23.72	20.575				
6,800.0	6,786.3	6,778.7	6,773.2	13.5	12.2	-9.85	-130.2	-56.1	489.0	465.0	24.05	20.330				
6,900.0	6,886.3	6,879.0	6,873.4	13.6	12.4	-9.77	-130.8	-58.0	490.2	465.8	24.39	20.097				
7,000.0	6,986.3	6,977.6	6,972.0	13.8	12.6	-9.70	-131.4	-59.9	491.6	466.8	24.73	19.877				
7,100.0	7,086.3	7,076.5	7,070.8	13.9	12.7	-9.62	-132.3	-62.1	493.2	468.1	25.07	19.673				
7,200.0	7,186.3	7,175.5	7,169.8	14.1	12.9	-9.52	-133.1	-64.6	495.0	469.6	25.41	19.483				
7,300.0	7,286.3	7,275.4	7,269.7	14.2	13.1	-9.40	-133.7	-67.3	496.9	471.1	25.74	19.301				
7,400.0	7,386.3	7,375.5	7,369.7	14.4	13.2	-9.27	-134.4	-70.0	498.8	472.7	26.08	19.122				
7,500.0	7,486.3	7,474.6	7,468.9	14.5	13.4	-9.16	-135.2	-72.7	500.7	474.3	26.42	18.951				
7,600.0	7,586.3	7,573.6	7,567.8	14.7	13.6	-9.05	-136.1	-75.5	502.9	476.2	26.76	18.793				
7,700.0	7,686.3	7,673.8	7,667.9	14.8	13.7	-8.97	-137.3	-78.2	505.2	478.1	27.10	18.638				
7,800.0	7,786.3	7,773.7	7,767.7	15.0	13.9	-8.93	-138.7	-80.7	507.4	479.9	27.45	18.485				
7,900.0	7,886.3	7,872.9	7,866.9	15.1	14.1	-8.89	-140.2	-83.2	509.7	481.9	27.79	18.341				
8,000.0	7,986.3	7,972.3	7,966.3	15.3	14.3	-8.83	-141.6	-86.0	512.1	484.0	28.13	18.206				
8,100.0	8,086.2	8,070.2	8,064.1	15.5	14.4	-8.73	-142.9	-89.1	514.8	486.3	28.47	18.082				
8,200.0	8,186.2	8,167.5	8,161.4	15.6	14.6	-8.62	-144.3	-92.7	518.0	489.2	28.81	17.981				
8,300.0	8,286.2	8,268.8	8,262.6	15.8	14.8	-8.56	-146.4	-96.3	521.4	492.2	29.15	17.885				
8,400.0	8,386.2	8,374.5	8,368.2	15.9	15.0	-8.46	-147.7	-99.6	524.0	494.5	29.50	17.763				
8,500.0	8,486.2	8,486.9	8,480.6	16.1	15.2	-8.36	-148.1	-101.7	525.1	495.2	29.87	17.579				
8,600.0	8,586.2	8,592.8	8,586.5	16.2	15.3	-8.58	-149.4	-100.1	524.1	493.8	30.23	17.333				
8,700.0	8,686.2	8,691.2	8,684.8	16.4	15.5	-8.85	-150.7	-98.1	522.7	492.2	30.58	17.091				
8,800.0	8,786.2	8,795.0	8,788.6	16.5	15.7	-9.11	-152.0	-96.0	521.3	490.4	30.94	16.846				
8,900.0	8,886.2	8,893.1	8,886.7	16.7	15.9	-9.35	-153.0	-93.9	519.6	488.3	31.29	16.605				
9,000.0	8,986.2	8,994.9	8,988.4	16.9	16.0	-9.62	-154.1	-91.6	518.0	486.3	31.65	16.364				
9,100.0	9,086.2	9,092.7	9,086.2	17.0	16.2	-9.90	-155.3	-89.3	516.4	484.4	32.00	16.136				
9,200.0	9,186.2	9,191.1	9,184.6	17.2	16.4	-10.19	-156.8	-87.1	515.0	482.7	32.35	15.919				
9,264.5	9,250.7	9,250.1	9,243.5	17.3	16.5	-10.34	-157.8	-86.4	514.7	482.1	32.57	15.803				
9,300.0	9,286.2	9,283.6	9,277.0	17.3	16.6	-10.40	-158.3	-86.3	514.8	482.1	32.69	15.747				
9,400.0	9,386.2	9,382.2	9,375.6	17.5	16.7	-10.59	-160.3	-86.2	515.4	482.3	33.04	15.599				
9,500.0	9,486.2	9,482.8	9,476.3	17.7	16.9	-10.76	-162.1	-86.1	515.9	482.5	33.39	15.450				
9,600.0	9,586.2	9,579.1	9,572.5	17.8	17.1	-10.83	-163.5	-86.8	516.8	483.0	33.73	15.321				
9,700.0	9,686.2	9,677.1	9,670.5	18.0	17.3	-10.90	-165.3	-88.1	518.3	484.3	34.07	15.212				
9,800.0	9,786.2	9,778.8	9,772.2	18.1	17.4	-10.96	-167.0	-89.5	519.8	485.4	34.42	15.101				
9,900.0	9,886.2	9,880.5	9,873.9	18.3	17.6	-11.00	-168.3	-90.7	521.0	486.2	34.77	14.983				
10,000.0	9,986.2	9,982.2	9,975.5	18.5	17.8	-11.01	-169.3	-91.7	521.8	486.7	35.12	14.858				
10,100.0	10,086.2	10,083.9	10,077.2	18.6	18.0	-11.01	-170.0	-92.7	522.3	486.8	35.47	14.726				

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 140-MWD													Offset Well Error:		0.0 ft
D21 595 Pad - LR04C D21 595 (Existing) - DD - DD															
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
10,200.0	10,186.2	10,183.2	10,176.5	18.8	18.1	-11.03	-170.6	-93.4	522.7	486.9	35.81	14.596			
10,300.0	10,286.2	10,283.1	10,276.4	18.9	18.3	-11.05	-171.4	-94.2	523.2	487.0	36.16	14.469			
10,400.0	10,386.2	10,382.0	10,375.3	19.1	18.5	-11.08	-172.3	-95.0	523.8	487.3	36.50	14.349			
10,500.0	10,486.2	10,480.1	10,473.4	19.3	18.6	-11.11	-173.4	-96.0	524.7	487.8	36.85	14.239			
10,600.0	10,586.2	10,578.9	10,572.2	19.4	18.8	-11.14	-174.7	-97.3	525.8	488.6	37.19	14.139			
10,700.0	10,686.2	10,676.9	10,670.2	19.6	19.0	-11.12	-175.8	-99.0	527.3	489.7	37.53	14.049			
10,800.0	10,786.2	10,774.6	10,767.8	19.8	19.2	-11.07	-177.0	-101.3	529.2	491.4	37.87	13.974			
10,900.0	10,886.2	10,875.5	10,868.7	19.9	19.3	-10.97	-177.9	-104.0	531.3	493.0	38.22	13.901			
11,000.0	10,986.2	10,976.4	10,969.6	20.1	19.5	-10.85	-178.6	-106.6	533.1	494.5	38.56	13.823			
11,100.0	11,086.2	11,075.2	11,068.3	20.2	19.7	-10.69	-179.0	-109.4	534.9	496.0	38.90	13.750			
11,200.0	11,186.2	11,172.8	11,165.9	20.4	19.8	-10.51	-179.5	-112.7	537.1	497.9	39.24	13.688			
11,300.0	11,286.2	11,271.2	11,264.1	20.6	20.0	-10.32	-180.0	-116.4	539.7	500.1	39.58	13.637			
11,400.0	11,386.2	11,371.0	11,363.9	20.7	20.2	-10.10	-180.6	-120.3	542.4	502.5	39.92	13.588			
11,500.0	11,486.2	11,468.6	11,461.4	20.9	20.4	-9.87	-181.1	-124.4	545.4	505.1	40.26	13.547			
11,600.0	11,586.2	11,566.8	11,559.5	21.1	20.5	-9.61	-181.6	-129.2	548.8	508.2	40.60	13.519			
11,700.0	11,686.2	11,670.0	11,662.6	21.2	20.7	-9.32	-182.0	-134.1	552.1	511.2	40.94	13.486			
11,800.0	11,786.2	11,774.7	11,767.1	21.4	20.9	-9.01	-181.5	-138.5	554.5	513.2	41.29	13.430			
11,900.0	11,886.2	11,876.8	11,869.2	21.6	21.1	-8.71	-180.8	-142.4	556.5	514.8	41.64	13.365			
11,924.8	11,911.0	11,902.5	11,894.9	21.6	21.1	-8.65	-180.7	-143.3	556.9	515.1	41.72	13.347 SF			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
0.0	0.0	0.0	0.0	0.0	0.0	-71.59	9.5	-28.5	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	-71.59	9.5	-28.5	30.0	29.7	0.30	101.087			
200.0	200.0	200.0	200.0	0.3	0.3	-71.59	9.5	-28.5	30.0	29.3	0.65	46.445 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	-134.66	9.5	-28.5	31.5	30.5	1.00	31.567			
400.0	399.8	400.4	400.3	0.7	0.7	-144.25	7.8	-27.8	35.4	34.0	1.36	26.078			
500.0	499.5	500.4	500.2	0.9	0.9	-157.20	3.0	-25.8	39.9	38.2	1.72	23.195			
600.0	599.2	599.8	599.3	1.1	1.1	-171.38	-5.1	-22.6	45.8	43.7	2.11	21.771			
700.0	698.9	698.8	697.6	1.3	1.3	175.62	-15.3	-18.4	54.4	51.8	2.51	21.683 SF			
800.0	798.7	797.8	796.0	1.5	1.6	166.35	-25.7	-14.2	64.9	62.0	2.91	22.283			
900.0	898.4	896.8	894.3	1.8	1.8	159.77	-36.1	-10.0	76.7	73.4	3.32	23.098			
1,000.0	998.1	995.7	992.7	2.0	2.1	154.99	-46.5	-5.8	89.2	85.5	3.73	23.937			
1,100.0	1,097.9	1,094.7	1,091.0	2.2	2.3	151.39	-56.8	-1.5	102.2	98.1	4.13	24.731			
1,200.0	1,197.6	1,193.7	1,189.3	2.4	2.6	148.61	-67.2	2.7	115.5	110.9	4.54	25.456			
1,300.0	1,297.3	1,292.7	1,287.7	2.6	2.8	146.41	-77.6	6.9	129.0	124.0	4.94	26.110			
1,400.0	1,397.0	1,391.6	1,386.0	2.8	3.1	144.62	-88.0	11.1	142.6	137.3	5.34	26.696			
1,500.0	1,496.8	1,490.6	1,484.4	3.1	3.3	143.15	-98.3	15.3	156.4	150.6	5.74	27.223			
1,600.0	1,596.5	1,589.6	1,582.7	3.3	3.6	141.92	-108.7	19.5	170.2	164.1	6.15	27.695			
1,700.0	1,696.2	1,688.6	1,681.1	3.5	3.9	140.87	-119.1	23.7	184.1	177.6	6.55	28.121			
1,800.0	1,796.0	1,787.6	1,779.4	3.7	4.1	139.97	-129.5	27.9	198.1	191.2	6.95	28.507			
1,900.0	1,895.7	1,886.5	1,877.7	3.9	4.4	139.19	-139.8	32.1	212.1	204.8	7.35	28.856			
2,000.0	1,995.4	1,985.5	1,976.1	4.1	4.6	138.50	-150.2	36.3	226.1	218.4	7.75	29.175			
2,100.0	2,095.1	2,084.5	2,074.4	4.4	4.9	137.90	-160.6	40.6	240.2	232.1	8.15	29.466			
2,200.0	2,194.9	2,183.5	2,172.8	4.6	5.2	137.36	-171.0	44.8	254.3	245.7	8.55	29.733			
2,300.0	2,294.6	2,282.4	2,271.1	4.8	5.4	136.88	-181.3	49.0	268.4	259.5	8.95	29.978			
2,400.0	2,394.3	2,381.4	2,369.4	5.0	5.7	136.44	-191.7	53.2	282.5	273.2	9.35	30.205			
2,500.0	2,494.1	2,480.4	2,467.8	5.2	5.9	136.05	-202.1	57.4	296.7	286.9	9.75	30.414			
2,600.0	2,593.8	2,579.4	2,566.1	5.4	6.2	135.70	-212.5	61.6	310.8	300.7	10.16	30.608			
2,700.0	2,693.5	2,678.3	2,664.5	5.7	6.5	135.37	-222.8	65.8	325.0	314.4	10.56	30.789			
2,800.0	2,793.3	2,777.3	2,762.8	5.9	6.7	135.07	-233.2	70.0	339.2	328.2	10.96	30.958			
2,900.0	2,893.0	2,876.3	2,861.1	6.1	7.0	134.80	-243.6	74.2	353.4	342.0	11.36	31.115			
3,000.0	2,992.7	2,975.3	2,959.5	6.3	7.2	134.55	-254.0	78.5	367.5	355.8	11.76	31.263			
3,100.0	3,092.4	3,074.2	3,057.8	6.5	7.5	134.31	-264.3	82.7	381.7	369.6	12.16	31.401			
3,200.0	3,192.2	3,173.2	3,156.2	6.7	7.8	134.09	-274.7	86.9	395.9	383.4	12.56	31.531			
3,300.0	3,291.9	3,272.2	3,254.5	7.0	8.0	133.89	-285.1	91.1	410.1	397.2	12.96	31.654			
3,400.0	3,391.6	3,371.2	3,352.8	7.2	8.3	133.70	-295.5	95.3	424.4	411.0	13.36	31.769			
3,500.0	3,491.4	3,470.1	3,451.2	7.4	8.5	133.53	-305.8	99.5	438.6	424.8	13.76	31.878			
3,600.0	3,591.1	3,569.1	3,549.5	7.6	8.8	133.36	-316.2	103.7	452.8	438.6	14.16	31.982			
3,700.0	3,690.8	3,668.1	3,647.9	7.8	9.1	133.20	-326.6	107.9	467.0	452.5	14.56	32.080			
3,800.0	3,790.5	3,767.1	3,746.2	8.0	9.3	133.06	-337.0	112.1	481.2	466.3	14.96	32.172			
3,900.0	3,890.3	3,866.0	3,844.5	8.3	9.6	132.92	-347.3	116.4	495.5	480.1	15.36	32.261			
4,000.0	3,990.0	3,965.0	3,942.9	8.5	9.8	132.79	-357.7	120.6	509.7	493.9	15.76	32.345			
4,100.0	4,089.7	4,064.0	4,041.2	8.7	10.1	132.67	-368.1	124.8	523.9	507.8	16.16	32.425			
4,200.0	4,189.5	4,163.0	4,139.6	8.9	10.4	132.55	-378.5	129.0	538.2	521.6	16.56	32.501			
4,300.0	4,289.2	4,261.9	4,237.9	9.1	10.6	132.44	-388.8	133.2	552.4	535.4	16.96	32.574			
4,400.0	4,388.9	4,360.9	4,336.2	9.3	10.9	132.33	-399.2	137.4	566.6	549.3	17.36	32.643			
4,500.0	4,488.6	4,459.9	4,434.6	9.6	11.1	132.23	-409.6	141.6	580.9	563.1	17.76	32.710			
4,600.0	4,588.4	4,558.9	4,532.9	9.8	11.4	132.14	-420.0	145.8	595.1	577.0	18.16	32.774			
4,700.0	4,688.1	4,657.8	4,631.3	10.0	11.7	132.05	-430.3	150.0	609.4	590.8	18.56	32.835			
4,800.0	4,787.8	4,756.8	4,729.6	10.2	11.9	131.96	-440.7	154.3	623.6	604.7	18.96	32.893			
4,900.0	4,887.6	4,855.8	4,827.9	10.4	12.2	131.88	-451.1	158.5	637.9	618.5	19.36	32.950			
5,000.0	4,987.3	4,954.8	4,926.3	10.6	12.4	131.80	-461.5	162.7	652.1	632.4	19.76	33.004			
5,100.0	5,087.0	5,053.7	5,024.6	10.9	12.7	131.73	-471.8	166.9	666.4	646.2	20.16	33.056			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
5,200.0	5,186.7	5,152.7	5,123.0	11.1	13.0	131.65	-482.2	171.1	680.6	660.1	20.56	33.106			
5,300.0	5,286.5	5,251.7	5,221.3	11.3	13.2	131.58	-492.6	175.3	694.9	673.9	20.96	33.154			
5,400.0	5,386.3	5,350.8	5,319.8	11.5	13.5	131.63	-503.0	179.5	707.9	686.5	21.36	33.135			
5,500.0	5,486.3	5,450.1	5,418.5	11.6	13.7	-48.50	-513.4	183.7	718.1	696.3	21.72	33.060			
5,600.0	5,586.3	5,549.5	5,517.2	11.8	14.0	-48.99	-523.8	188.0	727.3	705.3	22.06	32.974			
5,700.0	5,686.3	5,648.9	5,615.9	11.9	14.3	-49.50	-534.2	192.2	736.4	714.1	22.39	32.889			
5,800.0	5,786.3	5,748.2	5,714.7	12.0	14.5	-50.01	-544.6	196.4	745.6	722.9	22.73	32.811			
5,900.0	5,886.3	5,847.6	5,813.4	12.2	14.8	-50.50	-555.0	200.7	754.9	731.8	23.06	32.738			
6,000.0	5,986.3	5,947.0	5,912.1	12.3	15.1	-50.98	-565.5	204.9	764.1	740.8	23.39	32.671			
6,100.0	6,086.3	6,046.3	6,010.8	12.5	15.3	-51.45	-575.9	209.1	773.5	749.8	23.72	32.608			
6,200.0	6,186.3	6,145.7	6,109.6	12.6	15.6	-51.90	-586.3	213.3	782.9	758.8	24.05	32.551			
6,300.0	6,286.3	6,245.1	6,208.3	12.7	15.8	-52.35	-596.7	217.6	792.3	767.9	24.38	32.497			
6,400.0	6,386.3	6,344.4	6,307.0	12.9	16.1	-52.78	-607.1	221.8	801.8	777.1	24.71	32.447			
6,500.0	6,486.3	6,443.8	6,405.8	13.0	16.4	-53.21	-617.5	226.0	811.3	786.3	25.04	32.401			
6,600.0	6,586.3	6,543.2	6,504.5	13.2	16.6	-53.62	-628.0	230.2	820.9	795.5	25.37	32.358			
6,700.0	6,686.3	6,642.5	6,603.2	13.3	16.9	-54.03	-638.4	234.5	830.5	804.8	25.70	32.319			
6,800.0	6,786.3	6,741.9	6,701.9	13.5	17.2	-54.42	-648.8	238.7	840.2	814.2	26.03	32.282			
6,900.0	6,886.3	6,841.3	6,800.7	13.6	17.4	-54.81	-659.2	242.9	849.9	823.5	26.35	32.248			
7,000.0	6,986.3	6,940.6	6,899.4	13.8	17.7	-55.19	-669.6	247.2	859.6	832.9	26.68	32.216			
7,100.0	7,086.3	7,040.0	6,998.1	13.9	17.9	-55.56	-680.0	251.4	869.4	842.4	27.01	32.187			
7,200.0	7,186.3	7,139.4	7,096.8	14.1	18.2	-55.92	-690.4	255.6	879.2	851.8	27.34	32.160			
7,300.0	7,286.3	7,238.7	7,195.6	14.2	18.5	-56.28	-700.9	259.8	889.0	861.3	27.67	32.135			
7,400.0	7,386.3	7,338.1	7,294.3	14.4	18.7	-56.62	-711.3	264.1	898.9	870.9	27.99	32.112			
7,500.0	7,486.3	7,437.5	7,393.0	14.5	19.0	-56.96	-721.7	268.3	908.8	880.5	28.32	32.090			
7,600.0	7,586.3	7,536.8	7,491.8	14.7	19.2	-57.29	-732.1	272.5	918.7	890.1	28.65	32.071			
7,700.0	7,686.3	7,636.2	7,590.5	14.8	19.5	-57.62	-742.5	276.8	928.7	899.7	28.97	32.052			
7,800.0	7,786.3	7,735.6	7,689.2	15.0	19.8	-57.93	-752.9	281.0	938.7	909.4	29.30	32.035			
7,900.0	7,886.3	7,834.9	7,787.9	15.1	20.0	-58.25	-763.4	285.2	948.7	919.1	29.63	32.020			
8,000.0	7,986.3	7,934.3	7,886.7	15.3	20.3	-58.55	-773.8	289.4	958.7	928.8	29.96	32.005			
8,100.0	8,086.2	8,033.7	7,985.4	15.5	20.6	-58.85	-784.2	293.7	968.8	938.5	30.28	31.992			
8,200.0	8,186.2	8,133.0	8,084.1	15.6	20.8	-59.14	-794.6	297.9	978.9	948.3	30.61	31.980			
8,300.0	8,286.2	8,232.4	8,182.9	15.8	21.1	-59.43	-805.0	302.1	989.0	958.1	30.94	31.969			
8,400.0	8,386.2	8,331.8	8,281.6	15.9	21.3	-59.71	-815.4	306.3	999.2	967.9	31.27	31.959			
8,500.0	8,486.2	8,431.1	8,380.3	16.1	21.6	-59.98	-825.9	310.6	1,009.4	977.8	31.59	31.949			
8,600.0	8,586.2	8,536.5	8,485.0	16.2	21.9	-60.26	-836.8	315.0	1,019.5	987.6	31.93	31.931			
8,700.0	8,686.2	8,685.8	8,633.8	16.4	22.2	-60.56	-848.0	319.6	1,026.7	994.4	32.33	31.756			
8,800.0	8,786.2	8,835.9	8,783.8	16.5	22.4	-60.69	-852.0	321.2	1,029.1	996.4	32.73	31.441			
8,900.0	8,886.2	8,936.3	8,884.2	16.7	22.5	-60.71	-852.1	321.0	1,028.9	995.8	33.05	31.128			
8,951.7	8,937.9	8,986.8	8,934.8	16.8	22.6	-60.72	-852.3	320.8	1,028.9	995.7	33.22	30.974			
9,000.0	8,986.2	9,034.1	8,982.0	16.9	22.6	-60.72	-852.4	320.5	1,028.9	995.5	33.37	30.832			
9,100.0	9,086.2	9,132.0	9,079.9	17.0	22.7	-60.70	-852.9	319.6	1,029.1	995.4	33.69	30.548			
9,200.0	9,186.2	9,231.3	9,179.3	17.2	22.9	-60.66	-853.6	318.4	1,029.5	995.5	34.01	30.270			
9,300.0	9,286.2	9,331.3	9,279.2	17.3	23.0	-60.62	-854.3	317.2	1,029.8	995.5	34.33	29.997			
9,400.0	9,386.2	9,431.3	9,379.2	17.5	23.1	-60.59	-855.0	316.0	1,030.2	995.5	34.65	29.728			
9,500.0	9,486.2	9,531.3	9,479.2	17.7	23.2	-60.55	-855.7	314.9	1,030.6	995.6	34.98	29.463			
9,600.0	9,586.2	9,631.3	9,579.2	17.8	23.4	-60.51	-856.4	313.7	1,030.9	995.6	35.30	29.204			
9,700.0	9,686.2	9,731.3	9,679.2	18.0	23.5	-60.48	-857.1	312.5	1,031.3	995.7	35.63	28.948			
9,800.0	9,786.2	9,831.3	9,779.2	18.1	23.6	-60.44	-857.8	311.3	1,031.7	995.7	35.95	28.697			
9,900.0	9,886.2	9,931.3	9,879.2	18.3	23.8	-60.40	-858.5	310.1	1,032.1	995.8	36.28	28.450			
10,000.0	9,986.2	10,031.3	9,979.2	18.5	23.9	-60.37	-859.1	308.9	1,032.4	995.8	36.60	28.207			
10,100.0	10,086.2	10,131.3	10,079.2	18.6	24.0	-60.33	-859.8	307.7	1,032.8	995.9	36.93	27.968			
10,200.0	10,186.2	10,231.3	10,179.1	18.8	24.2	-60.29	-860.5	306.5	1,033.2	995.9	37.26	27.732			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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		
10,300.0	10,286.2	10,331.3	10,279.1	18.9	24.3	-60.26	-861.2	305.3	1,033.5	996.0	37.58	27.501			
10,400.0	10,386.2	10,431.3	10,379.1	19.1	24.4	-60.22	-861.9	304.1	1,033.9	996.0	37.91	27.273			
10,500.0	10,486.2	10,531.3	10,479.1	19.3	24.6	-60.18	-862.6	302.9	1,034.3	996.1	38.24	27.049			
10,600.0	10,586.2	10,631.3	10,579.1	19.4	24.7	-60.15	-863.3	301.7	1,034.7	996.1	38.57	26.828			
10,700.0	10,686.2	10,731.3	10,679.1	19.6	24.8	-60.11	-864.0	300.5	1,035.1	996.2	38.89	26.611			
10,800.0	10,786.2	10,831.3	10,779.1	19.8	25.0	-60.08	-864.7	299.3	1,035.4	996.2	39.22	26.398			
10,900.0	10,886.2	10,931.3	10,879.1	19.9	25.1	-60.04	-865.4	298.1	1,035.8	996.2	39.55	26.187			
11,000.0	10,986.2	11,031.3	10,979.0	20.1	25.2	-60.00	-866.1	296.9	1,036.2	996.3	39.88	25.980			
11,100.0	11,086.2	11,131.3	11,079.0	20.2	25.4	-59.97	-866.7	295.7	1,036.6	996.3	40.21	25.776			
11,200.0	11,186.2	11,231.3	11,179.0	20.4	25.5	-59.93	-867.4	294.5	1,036.9	996.4	40.54	25.576			
11,300.0	11,286.2	11,331.3	11,279.0	20.6	25.6	-59.89	-868.1	293.3	1,037.3	996.4	40.87	25.378			
11,400.0	11,386.2	11,431.3	11,379.0	20.7	25.8	-59.86	-868.8	292.1	1,037.7	996.5	41.21	25.183			
11,500.0	11,486.2	11,531.3	11,479.0	20.9	25.9	-59.82	-869.5	290.9	1,038.1	996.5	41.54	24.991			
11,600.0	11,586.2	11,631.3	11,579.0	21.1	26.0	-59.79	-870.2	289.7	1,038.4	996.6	41.87	24.803			
11,700.0	11,686.2	11,731.3	11,679.0	21.2	26.2	-59.75	-870.9	288.5	1,038.8	996.6	42.20	24.616			
11,800.0	11,786.2	11,831.3	11,778.9	21.4	26.3	-59.71	-871.6	287.3	1,039.2	996.7	42.53	24.433			
11,900.0	11,886.2	11,894.0	11,841.7	21.6	26.4	-59.69	-872.0	286.6	1,040.3	997.5	42.80	24.303			
11,924.8	11,911.0	11,894.0	11,841.7	21.6	26.4	-59.69	-872.0	286.6	1,041.5	998.7	42.85	24.309			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 202-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	-67.53	52.5	-126.8	137.3						
100.0	100.0	94.9	94.9	0.1	0.2	-67.51	52.6	-127.1	137.6	137.3	0.31	448.444			
200.0	200.0	193.7	193.7	0.3	0.3	-67.47	53.2	-128.2	138.8	138.2	0.65	214.765			
300.0	300.0	293.3	293.2	0.5	0.5	-128.16	54.0	-129.8	142.0	141.0	0.99	142.914			
400.0	399.8	392.0	392.0	0.7	0.7	-130.17	54.5	-132.1	148.3	146.9	1.35	109.483			
500.0	499.5	492.9	492.8	0.9	0.9	-132.85	53.7	-134.7	155.4	153.7	1.72	90.272			
600.0	599.2	596.2	596.0	1.1	1.0	-135.93	50.9	-136.2	161.2	159.1	2.09	76.962			
700.0	698.9	697.9	697.6	1.3	1.2	-139.69	45.1	-136.3	165.6	163.1	2.47	67.066			
800.0	798.7	799.7	799.1	1.5	1.4	-144.00	37.0	-135.3	169.2	166.4	2.85	59.378			
900.0	898.4	901.1	900.0	1.8	1.6	-148.44	27.7	-133.0	172.4	169.2	3.24	53.293			
1,000.0	998.1	1,002.5	1,000.9	2.0	1.8	-152.76	18.2	-129.3	175.3	171.6	3.62	48.384			
1,100.0	1,097.9	1,104.2	1,102.0	2.2	2.1	-156.78	9.4	-124.3	177.8	173.8	4.01	44.286			
1,200.0	1,197.6	1,204.9	1,202.1	2.4	2.3	-160.98	-0.2	-117.9	179.8	175.3	4.42	40.705			
1,300.0	1,297.3	1,303.0	1,299.4	2.6	2.6	-165.29	-10.5	-111.3	182.6	177.8	4.83	37.828			
1,400.0	1,397.0	1,399.2	1,394.9	2.8	2.8	-169.52	-21.4	-105.8	187.6	182.4	5.23	35.884			
1,500.0	1,496.8	1,499.1	1,494.1	3.1	3.0	-173.14	-31.4	-101.1	194.2	188.6	5.64	34.466			
1,600.0	1,596.5	1,597.7	1,592.2	3.3	3.3	-176.37	-40.8	-96.5	201.3	195.2	6.04	33.315			
1,700.0	1,696.2	1,697.5	1,691.5	3.5	3.5	-179.32	-50.0	-92.0	208.9	202.5	6.44	32.415			
1,800.0	1,796.0	1,796.7	1,790.2	3.7	3.8	178.12	-58.5	-87.6	216.8	210.0	6.84	31.681			
1,900.0	1,895.7	1,891.9	1,884.9	3.9	4.0	175.72	-67.6	-83.9	226.1	218.8	7.25	31.200			
2,000.0	1,995.4	1,991.1	1,983.4	4.1	4.3	173.22	-78.1	-80.2	236.6	228.9	7.66	30.877			
2,100.0	2,095.1	2,086.3	2,077.9	4.4	4.5	170.75	-89.6	-76.5	248.2	240.1	8.08	30.707			
2,200.0	2,194.9	2,180.7	2,171.4	4.6	4.8	168.46	-102.2	-73.8	261.8	253.3	8.49	30.845			
2,300.0	2,294.6	2,279.8	2,269.6	4.8	5.1	166.31	-115.7	-71.5	276.5	267.6	8.91	31.028			
2,400.0	2,394.3	2,380.3	2,369.1	5.0	5.4	164.37	-129.1	-69.0	291.2	281.9	9.33	31.207			
2,500.0	2,494.1	2,487.9	2,475.6	5.2	5.7	162.09	-143.2	-62.9	303.9	294.1	9.80	31.012			
2,600.0	2,593.8	2,587.4	2,574.0	5.4	6.0	159.93	-156.0	-55.6	315.7	305.5	10.24	30.832			
2,700.0	2,693.5	2,687.2	2,672.8	5.7	6.3	157.99	-168.3	-48.4	327.6	316.9	10.67	30.687			
2,800.0	2,793.3	2,783.3	2,768.1	5.9	6.5	156.44	-179.5	-42.2	339.8	328.7	11.09	30.640 SF			
2,900.0	2,893.0	2,874.9	2,858.8	6.1	6.8	155.22	-190.9	-38.1	353.9	342.4	11.48	30.815			
3,000.0	2,992.7	2,974.1	2,957.0	6.3	7.1	153.98	-204.4	-34.2	369.5	357.6	11.90	31.041			
3,100.0	3,092.4	3,013.0	2,995.6	6.5	7.2	153.54	-209.3	-32.6	389.1	376.9	12.18	31.959			
3,200.0	3,192.2	3,013.0	2,995.6	6.7	7.2	153.54	-209.3	-32.6	430.0	417.7	12.36	34.796			
3,300.0	3,291.9	3,013.0	2,995.6	7.0	7.2	153.54	-209.3	-32.6	488.3	475.8	12.54	38.932			
3,400.0	3,391.6	3,013.0	2,995.6	7.2	7.2	153.54	-209.3	-32.6	558.6	545.8	12.73	43.889			
3,500.0	3,491.4	3,013.0	2,995.6	7.4	7.2	153.54	-209.3	-32.6	636.8	623.9	12.91	49.324			
3,600.0	3,591.1	3,013.0	2,995.6	7.6	7.2	153.54	-209.3	-32.6	720.4	707.3	13.09	55.020			
3,700.0	3,690.8	3,013.0	2,995.6	7.8	7.2	153.54	-209.3	-32.6	807.8	794.5	13.28	60.838			
3,800.0	3,790.5	3,013.0	2,995.6	8.0	7.2	153.54	-209.3	-32.6	897.8	884.4	13.46	66.694			
3,900.0	3,890.3	3,013.0	2,995.6	8.3	7.2	153.54	-209.3	-32.6	989.8	976.1	13.65	72.533			
4,000.0	3,990.0	3,013.0	2,995.6	8.5	7.2	153.54	-209.3	-32.6	1,083.1	1,069.3	13.83	78.320			
4,100.0	4,089.7	3,013.0	2,995.6	8.7	7.2	153.54	-209.3	-32.6	1,177.6	1,163.6	14.01	84.033			
4,200.0	4,189.5	3,013.0	2,995.6	8.9	7.2	153.54	-209.3	-32.6	1,272.9	1,258.7	14.20	89.657			
4,300.0	4,289.2	3,013.0	2,995.6	9.1	7.2	153.54	-209.3	-32.6	1,368.8	1,354.5	14.38	95.185			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
0.0	0.0	0.0	0.0	0.0	0.0	-71.62	33.1	-99.7	105.1						
100.0	100.0	100.0	100.0	0.1	0.2	-71.62	33.1	-99.7	105.1	104.8	0.32	325.531			
200.0	200.0	200.0	200.0	0.3	0.3	-71.62	33.1	-99.7	105.1	104.4	0.67	156.424	CC, ES		
300.0	300.0	301.8	301.8	0.5	0.5	-133.48	31.4	-99.4	105.7	104.7	1.03	102.629			
400.0	399.8	403.0	402.9	0.7	0.7	-138.43	26.1	-98.2	107.9	106.5	1.41	76.573			
500.0	499.5	503.5	503.0	0.9	1.0	-145.18	17.4	-96.3	110.6	108.8	1.81	60.948			
600.0	599.2	602.5	601.4	1.1	1.2	-152.46	6.9	-94.1	114.3	112.1	2.23	51.278			
700.0	698.9	701.4	699.7	1.3	1.4	-159.19	-3.7	-91.8	119.8	117.2	2.65	45.270			
800.0	798.7	800.3	798.0	1.5	1.7	-165.27	-14.3	-89.5	126.8	123.8	3.06	41.425			
900.0	898.4	899.2	896.2	1.8	1.9	-170.66	-24.9	-87.2	135.1	131.6	3.47	38.910			
1,000.0	998.1	998.1	994.5	2.0	2.2	-175.40	-35.5	-84.9	144.5	140.6	3.88	37.242			
1,100.0	1,097.9	1,097.0	1,092.8	2.2	2.4	-179.55	-46.1	-82.6	154.7	150.4	4.28	36.125			
1,200.0	1,197.6	1,195.8	1,191.1	2.4	2.7	176.82	-56.6	-80.3	165.6	161.0	4.68	35.375			
1,300.0	1,297.3	1,294.7	1,289.4	2.6	2.9	173.66	-67.2	-78.0	177.2	172.1	5.08	34.873			
1,400.0	1,397.0	1,393.6	1,387.7	2.8	3.2	170.88	-77.8	-75.7	189.2	183.7	5.48	34.542			
1,500.0	1,496.8	1,492.5	1,486.0	3.1	3.5	168.44	-88.4	-73.5	201.5	195.7	5.87	34.331			
1,600.0	1,596.5	1,591.4	1,584.3	3.3	3.7	166.28	-99.0	-71.2	214.2	208.0	6.26	34.203			
1,700.0	1,696.2	1,690.3	1,682.6	3.5	4.0	164.36	-109.6	-68.9	227.2	220.5	6.66	34.136			
1,800.0	1,796.0	1,789.1	1,780.8	3.7	4.2	162.65	-120.2	-66.6	240.4	233.3	7.05	34.111			
1,900.0	1,895.7	1,888.0	1,879.1	3.9	4.5	161.12	-130.7	-64.3	253.8	246.3	7.44	34.116			
2,000.0	1,995.4	1,986.9	1,977.4	4.1	4.7	159.75	-141.3	-62.0	267.3	259.5	7.83	34.143			
2,100.0	2,095.1	2,085.8	2,075.7	4.4	5.0	158.50	-151.9	-59.7	281.0	272.8	8.22	34.186			
2,200.0	2,194.9	2,184.7	2,174.0	4.6	5.2	157.37	-162.5	-57.4	294.8	286.2	8.61	34.240			
2,300.0	2,294.6	2,283.6	2,272.3	4.8	5.5	156.35	-173.1	-55.1	308.7	299.7	9.00	34.301			
2,400.0	2,394.3	2,382.4	2,370.6	5.0	5.7	155.41	-183.7	-52.8	322.7	313.3	9.39	34.367			
2,500.0	2,494.1	2,481.3	2,468.9	5.2	6.0	154.55	-194.3	-50.6	336.7	327.0	9.78	34.436			
2,600.0	2,593.8	2,580.2	2,567.2	5.4	6.3	153.76	-204.8	-48.3	350.9	340.7	10.17	34.508			
2,700.0	2,693.5	2,679.1	2,665.4	5.7	6.5	153.02	-215.4	-46.0	365.1	354.5	10.56	34.579			
2,800.0	2,793.3	2,778.0	2,763.7	5.9	6.8	152.35	-226.0	-43.7	379.3	368.4	10.95	34.651			
2,900.0	2,893.0	2,876.9	2,862.0	6.1	7.0	151.72	-236.6	-41.4	393.6	382.3	11.34	34.723			
3,000.0	2,992.7	2,975.8	2,960.3	6.3	7.3	151.14	-247.2	-39.1	407.9	396.2	11.72	34.793			
3,100.0	3,092.4	3,074.6	3,058.6	6.5	7.5	150.60	-257.8	-36.8	422.3	410.2	12.11	34.863			
3,200.0	3,192.2	3,173.5	3,156.9	6.7	7.8	150.09	-268.4	-34.5	436.7	424.2	12.50	34.931			
3,300.0	3,291.9	3,272.4	3,255.2	7.0	8.0	149.61	-278.9	-32.2	451.2	438.3	12.89	34.997			
3,400.0	3,391.6	3,371.3	3,353.5	7.2	8.3	149.17	-289.5	-29.9	465.7	452.4	13.28	35.061			
3,500.0	3,491.4	3,470.2	3,451.8	7.4	8.6	148.75	-300.1	-27.7	480.2	466.5	13.67	35.124			
3,600.0	3,591.1	3,569.1	3,550.1	7.6	8.8	148.35	-310.7	-25.4	494.7	480.6	14.06	35.185			
3,700.0	3,690.8	3,667.9	3,648.3	7.8	9.1	147.98	-321.3	-23.1	509.2	494.8	14.45	35.244			
3,800.0	3,790.5	3,766.8	3,746.6	8.0	9.3	147.63	-331.9	-20.8	523.8	509.0	14.84	35.302			
3,900.0	3,890.3	3,865.7	3,844.9	8.3	9.6	147.30	-342.4	-18.5	538.4	523.1	15.23	35.358			
4,000.0	3,990.0	3,964.6	3,943.2	8.5	9.8	146.98	-353.0	-16.2	553.0	537.4	15.62	35.412			
4,100.0	4,089.7	4,063.5	4,041.5	8.7	10.1	146.69	-363.6	-13.9	567.6	551.6	16.00	35.464			
4,200.0	4,189.5	4,162.4	4,139.8	8.9	10.3	146.40	-374.2	-11.6	582.2	565.8	16.39	35.515			
4,300.0	4,289.2	4,261.2	4,238.1	9.1	10.6	146.13	-384.8	-9.3	596.9	580.1	16.78	35.564			
4,400.0	4,388.9	4,360.1	4,336.4	9.3	10.9	145.88	-395.4	-7.0	611.5	594.3	17.17	35.612			
4,500.0	4,488.6	4,459.0	4,434.7	9.6	11.1	145.63	-406.0	-4.8	626.2	608.6	17.56	35.658			
4,600.0	4,588.4	4,557.9	4,532.9	9.8	11.4	145.40	-416.5	-2.5	640.9	622.9	17.95	35.703			
4,700.0	4,688.1	4,656.8	4,631.2	10.0	11.6	145.17	-427.1	-0.2	655.5	637.2	18.34	35.747			
4,800.0	4,787.8	4,755.7	4,729.5	10.2	11.9	144.96	-437.7	2.1	670.2	651.5	18.73	35.789			
4,900.0	4,887.6	4,854.5	4,827.8	10.4	12.1	144.76	-448.3	4.4	684.9	665.8	19.12	35.830			
5,000.0	4,987.3	4,953.4	4,926.1	10.6	12.4	144.56	-458.9	6.7	699.7	680.2	19.51	35.869			
5,100.0	5,087.0	5,052.3	5,024.4	10.9	12.6	144.37	-469.5	9.0	714.4	694.5	19.89	35.908			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: O-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
5,200.0	5,186.7	5,151.3	5,122.8	11.1	12.9	144.19	-480.1	11.3	729.1	708.8	20.28	35.945			
5,300.0	5,286.5	5,276.2	5,247.2	11.3	13.2	144.10	-490.8	13.6	742.1	721.4	20.70	35.843			
5,400.0	5,386.3	5,402.2	5,373.1	11.5	13.4	144.27	-496.2	14.8	750.0	728.9	21.12	35.513			
5,500.0	5,486.3	5,514.1	5,485.0	11.6	13.5	-35.52	-496.9	14.9	751.5	730.0	21.46	35.019			
5,600.0	5,586.3	5,611.6	5,582.5	11.8	13.6	-35.52	-497.1	14.5	751.6	729.8	21.76	34.532			
5,700.0	5,686.3	5,711.6	5,682.5	11.9	13.8	-35.52	-497.4	14.0	751.6	729.5	22.07	34.049			
5,800.0	5,786.3	5,811.6	5,782.5	12.0	13.9	-35.52	-497.7	13.4	751.6	729.2	22.38	33.578			
5,900.0	5,886.3	5,911.6	5,882.5	12.2	14.0	-35.52	-498.0	12.9	751.6	728.9	22.69	33.117			
6,000.0	5,986.3	6,011.6	5,982.5	12.3	14.2	-35.52	-498.3	12.3	751.6	728.6	23.01	32.668			
6,100.0	6,086.3	6,111.6	6,082.5	12.5	14.3	-35.52	-498.7	11.8	751.6	728.3	23.32	32.229			
6,200.0	6,186.3	6,211.6	6,182.5	12.6	14.4	-35.52	-499.0	11.2	751.6	727.9	23.63	31.800			
6,300.0	6,286.3	6,311.6	6,282.4	12.7	14.5	-35.52	-499.3	10.7	751.6	727.6	23.95	31.381			
6,400.0	6,386.3	6,411.6	6,382.4	12.9	14.7	-35.52	-499.6	10.2	751.6	727.3	24.27	30.972			
6,500.0	6,486.3	6,511.6	6,482.4	13.0	14.8	-35.52	-499.9	9.6	751.6	727.0	24.58	30.573			
6,600.0	6,586.3	6,611.6	6,582.4	13.2	15.0	-35.52	-500.2	9.1	751.6	726.7	24.90	30.182			
6,700.0	6,686.3	6,711.6	6,682.4	13.3	15.1	-35.52	-500.5	8.5	751.6	726.4	25.22	29.801			
6,800.0	6,786.3	6,811.6	6,782.4	13.5	15.2	-35.52	-500.9	8.0	751.6	726.0	25.54	29.428			
6,900.0	6,886.3	6,911.6	6,882.4	13.6	15.4	-35.52	-501.2	7.4	751.6	725.7	25.86	29.063			
7,000.0	6,986.3	7,011.6	6,982.4	13.8	15.5	-35.52	-501.5	6.9	751.6	725.4	26.18	28.707			
7,100.0	7,086.3	7,111.6	7,082.4	13.9	15.7	-35.52	-501.8	6.4	751.6	725.1	26.50	28.359			
7,200.0	7,186.3	7,211.6	7,182.4	14.1	15.8	-35.52	-502.1	5.8	751.6	724.7	26.83	28.018			
7,300.0	7,286.3	7,311.6	7,282.4	14.2	15.9	-35.52	-502.4	5.3	751.6	724.4	27.15	27.684			
7,400.0	7,386.3	7,411.6	7,382.4	14.4	16.1	-35.52	-502.7	4.7	751.6	724.1	27.47	27.358			
7,500.0	7,486.3	7,511.6	7,482.4	14.5	16.2	-35.52	-503.0	4.2	751.6	723.8	27.80	27.039			
7,600.0	7,586.3	7,611.6	7,582.4	14.7	16.4	-35.52	-503.4	3.6	751.6	723.5	28.12	26.726			
7,700.0	7,686.3	7,711.6	7,682.4	14.8	16.5	-35.52	-503.7	3.1	751.6	723.1	28.45	26.420			
7,800.0	7,786.3	7,811.6	7,782.4	15.0	16.7	-35.52	-504.0	2.6	751.6	722.8	28.77	26.121			
7,900.0	7,886.3	7,911.6	7,882.4	15.1	16.8	-35.52	-504.3	2.0	751.6	722.5	29.10	25.828			
8,000.0	7,986.3	8,011.6	7,982.4	15.3	16.9	-35.52	-504.6	1.5	751.6	722.2	29.43	25.541			
8,100.0	8,086.2	8,111.6	8,082.4	15.5	17.1	-35.52	-504.9	0.9	751.6	721.8	29.75	25.260			
8,200.0	8,186.2	8,211.6	8,182.4	15.6	17.2	-35.52	-505.2	0.4	751.6	721.5	30.08	24.984			
8,300.0	8,286.2	8,311.6	8,282.4	15.8	17.4	-35.52	-505.6	-0.2	751.6	721.2	30.41	24.714			
8,400.0	8,386.2	8,411.6	8,382.4	15.9	17.5	-35.52	-505.9	-0.7	751.6	720.8	30.74	24.450			
8,500.0	8,486.2	8,511.6	8,482.4	16.1	17.7	-35.52	-506.2	-1.2	751.6	720.5	31.07	24.190			
8,600.0	8,586.2	8,611.6	8,582.4	16.2	17.8	-35.52	-506.5	-1.8	751.6	720.2	31.40	23.936			
8,700.0	8,686.2	8,711.6	8,682.4	16.4	18.0	-35.52	-506.8	-2.3	751.6	719.8	31.73	23.687			
8,800.0	8,786.2	8,811.6	8,782.4	16.5	18.1	-35.52	-507.1	-2.9	751.6	719.5	32.06	23.443			
8,900.0	8,886.2	8,911.6	8,882.4	16.7	18.3	-35.52	-507.4	-3.4	751.6	719.2	32.39	23.203			
9,000.0	8,986.2	9,011.6	8,982.4	16.9	18.4	-35.52	-507.8	-4.0	751.6	718.9	32.72	22.968			
9,100.0	9,086.2	9,111.6	9,082.4	17.0	18.6	-35.52	-508.1	-4.5	751.6	718.5	33.05	22.738			
9,200.0	9,186.2	9,211.6	9,182.4	17.2	18.7	-35.52	-508.4	-5.0	751.6	718.2	33.39	22.511			
9,300.0	9,286.2	9,311.6	9,282.4	17.3	18.9	-35.52	-508.7	-5.6	751.6	717.9	33.72	22.289			
9,400.0	9,386.2	9,411.6	9,382.4	17.5	19.0	-35.52	-509.0	-6.1	751.6	717.5	34.05	22.071			
9,500.0	9,486.2	9,511.6	9,482.4	17.7	19.2	-35.52	-509.3	-6.7	751.6	717.2	34.39	21.858			
9,600.0	9,586.2	9,611.6	9,582.4	17.8	19.3	-35.52	-509.6	-7.2	751.6	716.9	34.72	21.648			
9,700.0	9,686.2	9,711.6	9,682.4	18.0	19.5	-35.52	-510.0	-7.8	751.6	716.5	35.05	21.442			
9,800.0	9,786.2	9,811.6	9,782.4	18.1	19.6	-35.52	-510.3	-8.3	751.6	716.2	35.39	21.239			
9,900.0	9,886.2	9,911.6	9,882.4	18.3	19.8	-35.52	-510.6	-8.8	751.6	715.9	35.72	21.040			
10,000.0	9,986.2	10,011.6	9,982.4	18.5	20.0	-35.52	-510.9	-9.4	751.6	715.5	36.06	20.845			
10,100.0	10,086.2	10,111.6	10,082.4	18.6	20.1	-35.52	-511.2	-9.9	751.6	715.2	36.39	20.653			
10,200.0	10,186.2	10,211.6	10,182.4	18.8	20.3	-35.52	-511.5	-10.5	751.6	714.9	36.73	20.465			
10,300.0	10,286.2	10,311.6	10,282.4	18.9	20.4	-35.52	-511.8	-11.0	751.6	714.5	37.06	20.279			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
D21 595 Pad - LR05BDR D21-595 - DD - Plan #2													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		
10,400.0	10,386.2	10,411.6	10,382.4	19.1	20.6	-35.52	-512.1	-11.6	751.6	714.2	37.40	20.097		
10,500.0	10,486.2	10,511.6	10,482.4	19.3	20.7	-35.52	-512.5	-12.1	751.6	713.9	37.73	19.918		
10,600.0	10,586.2	10,611.6	10,582.4	19.4	20.9	-35.52	-512.8	-12.6	751.6	713.5	38.07	19.743		
10,700.0	10,686.2	10,711.6	10,682.4	19.6	21.0	-35.52	-513.1	-13.2	751.6	713.2	38.41	19.570		
10,800.0	10,786.2	10,811.6	10,782.4	19.8	21.2	-35.52	-513.4	-13.7	751.6	712.8	38.74	19.400		
10,900.0	10,886.2	10,911.6	10,882.4	19.9	21.4	-35.52	-513.7	-14.3	751.6	712.5	39.08	19.232		
11,000.0	10,986.2	11,011.6	10,982.4	20.1	21.5	-35.52	-514.0	-14.8	751.6	712.2	39.42	19.068		
11,100.0	11,086.2	11,111.6	11,082.4	20.2	21.7	-35.52	-514.3	-15.4	751.6	711.8	39.75	18.906		
11,200.0	11,186.2	11,211.6	11,182.4	20.4	21.8	-35.52	-514.7	-15.9	751.6	711.5	40.09	18.747		
11,300.0	11,286.2	11,311.6	11,282.4	20.6	22.0	-35.52	-515.0	-16.4	751.6	711.2	40.43	18.590		
11,400.0	11,386.2	11,411.6	11,382.3	20.7	22.2	-35.52	-515.3	-17.0	751.6	710.8	40.77	18.436		
11,500.0	11,486.2	11,511.6	11,482.3	20.9	22.3	-35.52	-515.6	-17.5	751.6	710.5	41.10	18.285		
11,600.0	11,586.2	11,611.6	11,582.3	21.1	22.5	-35.52	-515.9	-18.1	751.6	710.1	41.44	18.135		
11,700.0	11,686.2	11,711.6	11,682.3	21.2	22.6	-35.52	-516.2	-18.6	751.6	709.8	41.78	17.988		
11,800.0	11,786.2	11,811.6	11,782.3	21.4	22.8	-35.52	-516.5	-19.2	751.6	709.5	42.12	17.844		
11,900.0	11,886.2	11,911.6	11,882.3	21.6	22.9	-35.52	-516.9	-19.7	751.6	709.1	42.46	17.702		
11,924.8	11,911.0	11,915.3	11,886.0	21.6	23.0	-35.52	-516.9	-19.7	751.9	709.4	42.51	17.688 SF		

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
0.0	0.0	0.0	0.0	0.0	0.0	-71.59	18.9	-56.9	60.0						
100.0	100.0	100.0	100.0	0.1	0.1	-71.59	18.9	-56.9	60.0	59.7	0.30	202.173			
200.0	200.0	200.0	200.0	0.3	0.3	-71.59	18.9	-56.9	60.0	59.3	0.65	92.890 CC, ES			
300.0	300.0	301.2	301.2	0.5	0.5	-134.63	17.2	-56.3	60.5	59.4	1.00	60.310			
400.0	399.8	401.9	401.7	0.7	0.7	-142.82	12.2	-54.6	62.6	61.2	1.38	45.403			
500.0	499.5	501.9	501.3	0.9	0.9	-153.63	3.9	-51.8	65.8	64.0	1.78	36.947			
600.0	599.2	601.0	599.7	1.1	1.2	-165.83	-7.6	-48.0	70.8	68.5	2.22	31.933			
700.0	698.9	699.4	696.9	1.3	1.5	-178.11	-21.8	-43.2	79.0	76.3	2.67	29.586			
800.0	798.7	797.6	794.0	1.5	1.8	171.96	-36.4	-38.3	90.3	87.1	3.11	28.990 SF			
900.0	898.4	895.9	891.0	1.8	2.1	164.37	-51.0	-33.3	103.7	100.1	3.55	29.225			
1,000.0	998.1	994.2	988.1	2.0	2.4	158.58	-65.6	-28.4	118.4	114.5	3.97	29.825			
1,100.0	1,097.9	1,092.5	1,085.1	2.2	2.7	154.09	-80.2	-23.5	134.1	129.8	4.39	30.566			
1,200.0	1,197.6	1,190.7	1,182.2	2.4	3.0	150.55	-94.8	-18.6	150.5	145.7	4.80	31.338			
1,300.0	1,297.3	1,289.0	1,279.2	2.6	3.3	147.71	-109.4	-13.6	167.3	162.1	5.21	32.093			
1,400.0	1,397.0	1,387.3	1,376.3	2.8	3.7	145.39	-124.0	-8.7	184.4	178.8	5.62	32.808			
1,500.0	1,496.8	1,485.5	1,473.4	3.1	4.0	143.46	-138.6	-3.8	201.8	195.8	6.03	33.474			
1,600.0	1,596.5	1,583.8	1,570.4	3.3	4.3	141.84	-153.2	1.1	219.4	212.9	6.44	34.090			
1,700.0	1,696.2	1,682.1	1,667.5	3.5	4.6	140.46	-167.8	6.0	237.1	230.2	6.84	34.657			
1,800.0	1,796.0	1,780.3	1,764.5	3.7	4.9	139.27	-182.4	11.0	254.9	247.7	7.25	35.179			
1,900.0	1,895.7	1,878.6	1,861.6	3.9	5.2	138.24	-197.0	15.9	272.8	265.2	7.65	35.660			
2,000.0	1,995.4	1,976.9	1,958.6	4.1	5.6	137.34	-211.6	20.8	290.8	282.8	8.05	36.103			
2,100.0	2,095.1	2,075.2	2,055.7	4.4	5.9	136.54	-226.2	25.7	308.9	300.4	8.46	36.512			
2,200.0	2,194.9	2,173.4	2,152.7	4.6	6.2	135.82	-240.8	30.7	327.0	318.1	8.86	36.891			
2,300.0	2,294.6	2,271.7	2,249.8	4.8	6.5	135.19	-255.4	35.6	345.1	335.9	9.27	37.241			
2,400.0	2,394.3	2,370.0	2,346.9	5.0	6.8	134.61	-270.0	40.5	363.3	353.6	9.67	37.566			
2,500.0	2,494.1	2,468.2	2,443.9	5.2	7.2	134.10	-284.6	45.4	381.5	371.4	10.07	37.869			
2,600.0	2,593.8	2,566.5	2,541.0	5.4	7.5	133.62	-299.2	50.4	399.8	389.3	10.48	38.152			
2,700.0	2,693.5	2,664.8	2,638.0	5.7	7.8	133.19	-313.8	55.3	418.0	407.2	10.88	38.415			
2,800.0	2,793.3	2,763.1	2,735.1	5.9	8.1	132.80	-328.4	60.2	436.3	425.0	11.29	38.662			
2,900.0	2,893.0	2,861.3	2,832.1	6.1	8.4	132.44	-343.0	65.1	454.6	442.9	11.69	38.894			
3,000.0	2,992.7	2,959.6	2,929.2	6.3	8.7	132.10	-357.6	70.0	473.0	460.9	12.09	39.111			
3,100.0	3,092.4	3,057.9	3,026.2	6.5	9.1	131.79	-372.2	75.0	491.3	478.8	12.50	39.316			
3,200.0	3,192.2	3,156.1	3,123.3	6.7	9.4	131.51	-386.8	79.9	509.7	496.8	12.90	39.509			
3,300.0	3,291.9	3,254.4	3,220.4	7.0	9.7	131.24	-401.4	84.8	528.0	514.7	13.30	39.691			
3,400.0	3,391.6	3,352.7	3,317.4	7.2	10.0	130.99	-416.0	89.7	546.4	532.7	13.71	39.863			
3,500.0	3,491.4	3,450.9	3,414.5	7.4	10.3	130.76	-430.6	94.7	564.8	550.7	14.11	40.026			
3,600.0	3,591.1	3,549.2	3,511.5	7.6	10.7	130.54	-445.2	99.6	583.2	568.7	14.51	40.180			
3,700.0	3,690.8	3,647.5	3,608.6	7.8	11.0	130.33	-459.8	104.5	601.6	586.7	14.92	40.327			
3,800.0	3,790.5	3,745.8	3,705.6	8.0	11.3	130.14	-474.4	109.4	620.0	604.7	15.32	40.466			
3,900.0	3,890.3	3,844.0	3,802.7	8.3	11.6	129.96	-489.0	114.3	638.4	622.7	15.72	40.599			
4,000.0	3,990.0	3,942.3	3,899.7	8.5	11.9	129.79	-503.6	119.3	656.8	640.7	16.13	40.726			
4,100.0	4,089.7	4,040.6	3,996.8	8.7	12.2	129.62	-518.2	124.2	675.2	658.7	16.53	40.846			
4,200.0	4,189.5	4,138.8	4,093.9	8.9	12.6	129.47	-532.8	129.1	693.7	676.7	16.93	40.961			
4,300.0	4,289.2	4,237.1	4,190.9	9.1	12.9	129.33	-547.4	134.0	712.1	694.8	17.34	41.071			
4,400.0	4,388.9	4,335.4	4,288.0	9.3	13.2	129.19	-562.0	139.0	730.5	712.8	17.74	41.177			
4,500.0	4,488.6	4,433.7	4,385.0	9.6	13.5	129.06	-576.6	143.9	749.0	730.8	18.14	41.277			
4,600.0	4,588.4	4,531.9	4,482.1	9.8	13.8	128.93	-591.2	148.8	767.4	748.9	18.55	41.374			
4,700.0	4,688.1	4,630.2	4,579.1	10.0	14.2	128.81	-605.8	153.7	785.9	766.9	18.95	41.467			
4,800.0	4,787.8	4,728.5	4,676.2	10.2	14.5	128.70	-620.4	158.6	804.3	785.0	19.36	41.556			
4,900.0	4,887.6	4,826.7	4,773.2	10.4	14.8	128.59	-635.0	163.6	822.8	803.0	19.76	41.641			
5,000.0	4,987.3	4,925.0	4,870.3	10.6	15.1	128.48	-649.6	168.5	841.2	821.1	20.16	41.723			
5,100.0	5,087.0	5,023.3	4,967.3	10.9	15.4	128.38	-664.2	173.4	859.7	839.1	20.57	41.802			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
5,200.0	5,186.7	5,121.5	5,064.4	11.1	15.8	128.29	-678.8	178.3	878.2	857.2	20.97	41.879			
5,300.0	5,286.5	5,219.8	5,161.5	11.3	16.1	128.20	-693.4	183.3	896.6	875.2	21.37	41.952			
5,400.0	5,386.3	5,318.3	5,258.7	11.5	16.4	128.34	-708.0	188.2	913.9	892.1	21.80	41.925			
5,500.0	5,486.3	5,417.0	5,356.2	11.6	16.7	-51.66	-722.6	193.1	928.6	906.5	22.16	41.900			
5,600.0	5,586.3	5,515.7	5,453.7	11.8	17.0	-52.08	-737.3	198.1	942.5	920.0	22.49	41.909			
5,700.0	5,686.3	5,614.5	5,551.3	11.9	17.4	-52.53	-752.0	203.0	956.2	933.4	22.81	41.922			
5,800.0	5,786.3	5,713.3	5,648.9	12.0	17.7	-52.96	-766.7	208.0	970.0	946.8	23.13	41.938			
5,900.0	5,886.3	5,812.1	5,746.4	12.2	18.0	-53.38	-781.3	212.9	983.8	960.3	23.45	41.957			
6,000.0	5,986.3	5,910.9	5,844.0	12.3	18.3	-53.79	-796.0	217.9	997.7	973.9	23.77	41.979			
6,100.0	6,086.3	6,009.7	5,941.5	12.5	18.6	-54.19	-810.7	222.8	1,011.6	987.5	24.08	42.002			
6,200.0	6,186.3	6,108.4	6,039.1	12.6	19.0	-54.58	-825.4	227.8	1,025.6	1,001.2	24.40	42.027			
6,300.0	6,286.3	6,207.2	6,136.6	12.7	19.3	-54.96	-840.0	232.7	1,039.6	1,014.9	24.72	42.053			
6,400.0	6,386.3	6,306.0	6,234.2	12.9	19.6	-55.33	-854.7	237.7	1,053.6	1,028.6	25.04	42.081			
6,500.0	6,486.3	6,404.8	6,331.8	13.0	19.9	-55.69	-869.4	242.6	1,067.7	1,042.4	25.36	42.110			
6,600.0	6,586.3	6,503.6	6,429.3	13.2	20.2	-56.04	-884.1	247.6	1,081.9	1,056.2	25.67	42.140			
6,700.0	6,686.3	6,602.3	6,526.9	13.3	20.6	-56.38	-898.7	252.5	1,096.1	1,070.1	25.99	42.170			
6,800.0	6,786.3	6,701.1	6,624.4	13.5	20.9	-56.71	-913.4	257.5	1,110.3	1,084.0	26.31	42.201			
6,900.0	6,886.3	6,799.9	6,722.0	13.6	21.2	-57.04	-928.1	262.4	1,124.5	1,097.9	26.63	42.233			
7,000.0	6,986.3	6,898.7	6,819.6	13.8	21.5	-57.35	-942.8	267.4	1,138.8	1,111.9	26.94	42.265			
7,100.0	7,086.3	6,997.5	6,917.1	13.9	21.8	-57.66	-957.4	272.3	1,153.1	1,125.9	27.26	42.298			
7,200.0	7,186.3	7,096.2	7,014.7	14.1	22.2	-57.96	-972.1	277.2	1,167.5	1,139.9	27.58	42.330			
7,300.0	7,286.3	7,195.0	7,112.2	14.2	22.5	-58.25	-986.8	282.2	1,181.9	1,154.0	27.90	42.363			
7,400.0	7,386.3	7,293.8	7,209.8	14.4	22.8	-58.54	-1,001.5	287.1	1,196.3	1,168.1	28.22	42.396			
7,500.0	7,486.3	7,392.6	7,307.4	14.5	23.1	-58.82	-1,016.1	292.1	1,210.7	1,182.2	28.54	42.429			
7,600.0	7,586.3	7,491.4	7,404.9	14.7	23.5	-59.09	-1,030.8	297.0	1,225.2	1,196.3	28.85	42.462			
7,700.0	7,686.3	7,590.1	7,502.5	14.8	23.8	-59.36	-1,045.5	302.0	1,239.7	1,210.5	29.17	42.494			
7,800.0	7,786.3	7,688.9	7,600.0	15.0	24.1	-59.62	-1,060.2	306.9	1,254.2	1,224.7	29.49	42.527			
7,900.0	7,886.3	7,787.7	7,697.6	15.1	24.4	-59.87	-1,074.8	311.9	1,268.8	1,238.9	29.81	42.559			
8,000.0	7,986.3	7,886.5	7,795.2	15.3	24.7	-60.12	-1,089.5	316.8	1,283.3	1,253.2	30.13	42.592			
8,100.0	8,086.2	7,985.3	7,892.7	15.5	25.1	-60.36	-1,104.2	321.8	1,297.9	1,267.5	30.45	42.623			
8,200.0	8,186.2	8,084.1	7,990.3	15.6	25.4	-60.60	-1,118.9	326.7	1,312.5	1,281.8	30.77	42.655			
8,300.0	8,286.2	8,182.8	8,087.8	15.8	25.7	-60.83	-1,133.5	331.7	1,327.2	1,296.1	31.09	42.687			
8,400.0	8,386.2	8,281.6	8,185.4	15.9	26.0	-61.06	-1,148.2	336.6	1,341.8	1,310.4	31.41	42.718			
8,500.0	8,486.2	8,380.4	8,283.0	16.1	26.3	-61.28	-1,162.9	341.6	1,356.5	1,324.8	31.73	42.748			
8,600.0	8,586.2	8,508.0	8,409.0	16.2	26.7	-61.55	-1,181.2	347.7	1,370.8	1,338.8	32.10	42.708			
8,700.0	8,686.2	8,692.1	8,592.2	16.4	27.1	-61.83	-1,199.2	353.8	1,380.4	1,347.9	32.55	42.412			
8,800.0	8,786.2	8,877.9	8,777.8	16.5	27.4	-61.95	-1,206.0	356.1	1,383.9	1,350.9	33.00	41.936			
8,900.0	8,886.2	8,983.8	8,883.7	16.7	27.5	-61.97	-1,206.1	356.0	1,383.7	1,350.3	33.33	41.518			
8,957.4	8,943.7	9,039.7	8,939.6	16.8	27.5	-61.98	-1,206.3	355.7	1,383.6	1,350.1	33.51	41.294			
9,000.0	8,986.2	9,081.1	8,981.0	16.9	27.6	-61.97	-1,206.4	355.5	1,383.7	1,350.0	33.64	41.130			
9,100.0	9,086.2	9,178.3	9,078.2	17.0	27.7	-61.96	-1,206.9	354.6	1,383.8	1,349.9	33.96	40.755			
9,200.0	9,186.2	9,277.3	9,177.2	17.2	27.8	-61.93	-1,207.6	353.5	1,384.2	1,349.9	34.27	40.386			
9,300.0	9,286.2	9,377.3	9,277.2	17.3	27.9	-61.91	-1,208.3	352.3	1,384.5	1,349.9	34.59	40.022			
9,400.0	9,386.2	9,477.3	9,377.2	17.5	28.0	-61.88	-1,209.0	351.1	1,384.9	1,350.0	34.92	39.664			
9,500.0	9,486.2	9,577.3	9,477.2	17.7	28.1	-61.85	-1,209.7	349.9	1,385.3	1,350.0	35.24	39.312			
9,600.0	9,586.2	9,677.3	9,577.2	17.8	28.2	-61.82	-1,210.4	348.7	1,385.6	1,350.1	35.56	38.966			
9,700.0	9,686.2	9,777.3	9,677.2	18.0	28.3	-61.80	-1,211.1	347.5	1,386.0	1,350.1	35.88	38.625			
9,800.0	9,786.2	9,877.3	9,777.1	18.1	28.4	-61.77	-1,211.8	346.3	1,386.3	1,350.1	36.21	38.290			
9,900.0	9,886.2	9,977.3	9,877.1	18.3	28.5	-61.74	-1,212.4	345.1	1,386.7	1,350.2	36.53	37.961			
10,000.0	9,986.2	10,077.3	9,977.1	18.5	28.7	-61.71	-1,213.1	343.9	1,387.0	1,350.2	36.85	37.636			
10,100.0	10,086.2	10,177.3	10,077.1	18.6	28.8	-61.69	-1,213.8	342.7	1,387.4	1,350.2	37.18	37.317			
10,200.0	10,186.2	10,277.3	10,177.1	18.8	28.9	-61.66	-1,214.5	341.5	1,387.8	1,350.3	37.50	37.003			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design D21 595 Pad - LR05C D21 595 - DD - Plan #2												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)			
10,300.0	10,286.2	10,377.3	10,277.1	18.9	29.0	-61.63	-1,215.2	340.3	1,388.1	1,350.3	37.83	36.694	
10,400.0	10,386.2	10,477.3	10,377.1	19.1	29.1	-61.60	-1,215.9	339.1	1,388.5	1,350.3	38.16	36.390	
10,500.0	10,486.2	10,577.3	10,477.1	19.3	29.2	-61.58	-1,216.6	337.9	1,388.8	1,350.4	38.48	36.091	
10,600.0	10,586.2	10,677.3	10,577.0	19.4	29.3	-61.55	-1,217.3	336.7	1,389.2	1,350.4	38.81	35.796	
10,700.0	10,686.2	10,777.3	10,677.0	19.6	29.4	-61.52	-1,218.0	335.5	1,389.6	1,350.4	39.14	35.506	
10,800.0	10,786.2	10,877.3	10,777.0	19.8	29.6	-61.49	-1,218.7	334.3	1,389.9	1,350.5	39.46	35.220	
10,900.0	10,886.2	10,977.3	10,877.0	19.9	29.7	-61.47	-1,219.4	333.1	1,390.3	1,350.5	39.79	34.939	
11,000.0	10,986.2	11,077.3	10,977.0	20.1	29.8	-61.44	-1,220.1	331.9	1,390.6	1,350.5	40.12	34.662	
11,100.0	11,086.2	11,177.3	11,077.0	20.2	29.9	-61.41	-1,220.7	330.7	1,391.0	1,350.6	40.45	34.389	
11,200.0	11,186.2	11,277.3	11,177.0	20.4	30.0	-61.38	-1,221.4	329.5	1,391.4	1,350.6	40.78	34.120	
11,300.0	11,286.2	11,377.3	11,277.0	20.6	30.2	-61.36	-1,222.1	328.3	1,391.7	1,350.6	41.11	33.856	
11,400.0	11,386.2	11,477.3	11,376.9	20.7	30.3	-61.33	-1,222.8	327.1	1,392.1	1,350.7	41.44	33.595	
11,500.0	11,486.2	11,577.3	11,476.9	20.9	30.4	-61.30	-1,223.5	325.9	1,392.5	1,350.7	41.77	33.338	
11,600.0	11,586.2	11,677.3	11,576.9	21.1	30.5	-61.28	-1,224.2	324.7	1,392.8	1,350.7	42.10	33.085	
11,700.0	11,686.2	11,777.3	11,676.9	21.2	30.6	-61.25	-1,224.9	323.5	1,393.2	1,350.7	42.43	32.836	
11,800.0	11,786.2	11,877.3	11,776.9	21.4	30.8	-61.22	-1,225.6	322.3	1,393.5	1,350.8	42.76	32.590	
11,900.0	11,886.2	11,946.4	11,846.0	21.6	30.8	-61.20	-1,226.1	321.5	1,394.2	1,351.2	43.04	32.394	
11,924.8	11,911.0	11,946.4	11,846.0	21.6	30.8	-61.20	-1,226.1	321.5	1,395.1	1,352.0	43.08	32.383	

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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	-71.59	28.4	-85.4	90.0						
100.0	100.0	100.0	100.0	0.1	0.1	-71.59	28.4	-85.4	90.0	89.7	0.30	303.260			
200.0	200.0	200.0	200.0	0.3	0.3	-71.59	28.4	-85.4	90.0	89.3	0.65	139.336	CC, ES		
300.0	300.0	301.5	301.5	0.5	0.5	-133.74	26.6	-85.0	90.6	89.6	1.00	90.301			
400.0	399.8	402.4	402.2	0.7	0.7	-139.48	21.4	-84.0	93.0	91.6	1.38	67.263			
500.0	499.5	502.6	502.0	0.9	0.9	-147.22	12.8	-82.2	96.1	94.3	1.79	53.757			
600.0	599.2	601.8	600.5	1.1	1.2	-156.23	0.8	-79.8	100.5	98.3	2.23	45.112			
700.0	698.9	700.0	697.5	1.3	1.5	-166.01	-14.3	-76.8	107.4	104.7	2.70	39.753			
800.0	798.7	797.4	793.3	1.5	1.8	-175.63	-31.8	-73.2	117.7	114.6	3.18	37.047			
900.0	898.4	895.0	889.1	1.8	2.2	176.33	-49.6	-69.6	131.0	127.3	3.64	36.002			
1,000.0	998.1	992.6	985.0	2.0	2.5	169.83	-67.3	-66.0	146.3	142.3	4.08	35.851	SF		
1,100.0	1,097.9	1,090.1	1,080.8	2.2	2.9	164.59	-85.1	-62.5	163.2	158.7	4.51	36.169			
1,200.0	1,197.6	1,187.7	1,176.7	2.4	3.2	160.34	-102.9	-58.9	181.2	176.2	4.93	36.724			
1,300.0	1,297.3	1,285.2	1,272.5	2.6	3.6	156.87	-120.7	-55.3	199.9	194.6	5.35	37.389			
1,400.0	1,397.0	1,382.8	1,368.4	2.8	3.9	153.99	-138.4	-51.7	219.3	213.5	5.76	38.093			
1,500.0	1,496.8	1,480.3	1,464.3	3.1	4.3	151.58	-156.2	-48.1	239.1	232.9	6.16	38.798			
1,600.0	1,596.5	1,577.9	1,560.1	3.3	4.6	149.54	-174.0	-44.5	259.3	252.7	6.57	39.483			
1,700.0	1,696.2	1,675.5	1,656.0	3.5	5.0	147.79	-191.8	-40.9	279.7	272.7	6.97	40.138			
1,800.0	1,796.0	1,773.0	1,751.8	3.7	5.4	146.28	-209.5	-37.3	300.3	293.0	7.37	40.758			
1,900.0	1,895.7	1,870.6	1,847.7	3.9	5.7	144.97	-227.3	-33.8	321.2	313.4	7.77	41.342			
2,000.0	1,995.4	1,968.1	1,943.5	4.1	6.1	143.81	-245.1	-30.2	342.1	334.0	8.17	41.889			
2,100.0	2,095.1	2,065.7	2,039.4	4.4	6.4	142.79	-262.8	-26.6	363.2	354.6	8.57	42.401			
2,200.0	2,194.9	2,163.3	2,135.3	4.6	6.8	141.88	-280.6	-23.0	384.4	375.4	8.96	42.881			
2,300.0	2,294.6	2,260.8	2,231.1	4.8	7.1	141.06	-298.4	-19.4	405.7	396.3	9.36	43.331			
2,400.0	2,394.3	2,358.4	2,327.0	5.0	7.5	140.33	-316.2	-15.8	427.0	417.2	9.76	43.751			
2,500.0	2,494.1	2,455.9	2,422.8	5.2	7.9	139.66	-333.9	-12.2	448.4	438.2	10.16	44.146			
2,600.0	2,593.8	2,553.5	2,518.7	5.4	8.2	139.06	-351.7	-8.6	469.8	459.3	10.55	44.516			
2,700.0	2,693.5	2,651.0	2,614.6	5.7	8.6	138.51	-369.5	-5.1	491.3	480.4	10.95	44.864			
2,800.0	2,793.3	2,748.6	2,710.4	5.9	8.9	138.00	-387.3	-1.5	512.9	501.5	11.35	45.192			
2,900.0	2,893.0	2,846.2	2,806.3	6.1	9.3	137.54	-405.0	2.1	534.4	522.7	11.75	45.500			
3,000.0	2,992.7	2,943.7	2,902.1	6.3	9.7	137.11	-422.8	5.7	556.0	543.9	12.14	45.791			
3,100.0	3,092.4	3,041.3	2,998.0	6.5	10.0	136.71	-440.6	9.3	577.7	565.1	12.54	46.066			
3,200.0	3,192.2	3,138.8	3,093.8	6.7	10.4	136.35	-458.4	12.9	599.3	586.4	12.94	46.326			
3,300.0	3,291.9	3,236.4	3,189.7	7.0	10.7	136.00	-476.1	16.5	621.0	607.7	13.33	46.572			
3,400.0	3,391.6	3,333.9	3,285.6	7.2	11.1	135.69	-493.9	20.1	642.7	629.0	13.73	46.805			
3,500.0	3,491.4	3,431.5	3,381.4	7.4	11.5	135.39	-511.7	23.6	664.4	650.3	14.13	47.027			
3,600.0	3,591.1	3,529.1	3,477.3	7.6	11.8	135.11	-529.5	27.2	686.1	671.6	14.53	47.237			
3,700.0	3,690.8	3,626.6	3,573.1	7.8	12.2	134.85	-547.2	30.8	707.9	693.0	14.92	47.437			
3,800.0	3,790.5	3,724.2	3,669.0	8.0	12.5	134.60	-565.0	34.4	729.6	714.3	15.32	47.628			
3,900.0	3,890.3	3,821.7	3,764.8	8.3	12.9	134.37	-582.8	38.0	751.4	735.7	15.72	47.810			
4,000.0	3,990.0	3,919.3	3,860.7	8.5	13.2	134.15	-600.5	41.6	773.2	757.1	16.11	47.983			
4,100.0	4,089.7	4,016.8	3,956.6	8.7	13.6	133.94	-618.3	45.2	795.0	778.5	16.51	48.149			
4,200.0	4,189.5	4,114.4	4,052.4	8.9	14.0	133.74	-636.1	48.8	816.8	799.9	16.91	48.308			
4,300.0	4,289.2	4,212.0	4,148.3	9.1	14.3	133.56	-653.9	52.3	838.6	821.3	17.30	48.459			
4,400.0	4,388.9	4,309.5	4,244.1	9.3	14.7	133.38	-671.6	55.9	860.4	842.7	17.70	48.605			
4,500.0	4,488.6	4,407.1	4,340.0	9.6	15.0	133.21	-689.4	59.5	882.2	864.1	18.10	48.744			
4,600.0	4,588.4	4,504.6	4,435.9	9.8	15.4	133.05	-707.2	63.1	904.1	885.6	18.50	48.877			
4,700.0	4,688.1	4,602.2	4,531.7	10.0	15.8	132.90	-725.0	66.7	925.9	907.0	18.89	49.006			
4,800.0	4,787.8	4,699.8	4,627.6	10.2	16.1	132.76	-742.7	70.3	947.7	928.4	19.29	49.129			
4,900.0	4,887.6	4,797.3	4,723.4	10.4	16.5	132.62	-760.5	73.9	969.6	949.9	19.69	49.248			
5,000.0	4,987.3	4,894.9	4,819.3	10.6	16.8	132.48	-778.3	77.5	991.4	971.4	20.09	49.362			
5,100.0	5,087.0	4,992.4	4,915.1	10.9	17.2	132.36	-796.1	81.0	1,013.3	992.8	20.48	49.472			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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		
5,200.0	5,186.7	5,090.0	5,011.0	11.1	17.6	132.24	-813.8	84.6	1,035.2	1,014.3	20.88	49.578			
5,300.0	5,286.5	5,187.5	5,106.9	11.3	17.9	132.12	-831.6	88.2	1,057.0	1,035.7	21.28	49.680			
5,400.0	5,386.3	5,285.3	5,202.9	11.5	18.3	132.29	-849.4	91.8	1,077.6	1,055.9	21.72	49.615			
5,500.0	5,486.3	5,383.5	5,299.4	11.6	18.6	-47.64	-867.3	95.4	1,095.5	1,073.4	22.10	49.578			
5,600.0	5,586.3	5,481.8	5,396.0	11.8	19.0	-48.00	-885.2	99.0	1,112.3	1,089.9	22.42	49.611			
5,700.0	5,686.3	5,580.1	5,492.5	11.9	19.4	-48.39	-903.1	102.7	1,129.1	1,106.3	22.74	49.650			
5,800.0	5,786.3	5,678.4	5,589.1	12.0	19.7	-48.78	-921.0	106.3	1,145.8	1,122.8	23.06	49.694			
5,900.0	5,886.3	5,776.7	5,685.7	12.2	20.1	-49.15	-938.9	109.9	1,162.7	1,139.3	23.38	49.738			
6,000.0	5,986.3	5,874.9	5,782.3	12.3	20.5	-49.52	-956.8	113.5	1,179.5	1,155.8	23.69	49.785			
6,100.0	6,086.3	5,973.2	5,878.9	12.5	20.8	-49.87	-974.8	117.1	1,196.4	1,172.4	24.01	49.832			
6,200.0	6,186.3	6,071.5	5,975.4	12.6	21.2	-50.21	-992.7	120.7	1,213.4	1,189.1	24.33	49.880			
6,300.0	6,286.3	6,169.8	6,072.0	12.7	21.5	-50.55	-1,010.6	124.3	1,230.4	1,205.8	24.64	49.929			
6,400.0	6,386.3	6,268.1	6,168.6	12.9	21.9	-50.87	-1,028.5	128.0	1,247.5	1,222.5	24.96	49.978			
6,500.0	6,486.3	6,366.4	6,265.2	13.0	22.3	-51.19	-1,046.4	131.6	1,264.5	1,239.3	25.28	50.027			
6,600.0	6,586.3	6,464.7	6,361.8	13.2	22.6	-51.49	-1,064.3	135.2	1,281.6	1,256.1	25.59	50.077			
6,700.0	6,686.3	6,563.0	6,458.3	13.3	23.0	-51.79	-1,082.2	138.8	1,298.8	1,272.9	25.91	50.127			
6,800.0	6,786.3	6,661.3	6,554.9	13.5	23.3	-52.09	-1,100.1	142.4	1,316.0	1,289.8	26.23	50.177			
6,900.0	6,886.3	6,759.6	6,651.5	13.6	23.7	-52.37	-1,118.0	146.0	1,333.2	1,306.7	26.54	50.226			
7,000.0	6,986.3	6,857.9	6,748.1	13.8	24.1	-52.65	-1,135.9	149.7	1,350.4	1,323.6	26.86	50.276			
7,100.0	7,086.3	6,956.2	6,844.7	13.9	24.4	-52.92	-1,153.8	153.3	1,367.7	1,340.5	27.18	50.325			
7,200.0	7,186.3	7,054.5	6,941.2	14.1	24.8	-53.18	-1,171.7	156.9	1,385.0	1,357.5	27.49	50.374			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
0.0	0.0	0.0	0.0	0.0	0.0	108.41	-9.5	28.5	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	108.41	-9.5	28.5	30.0	29.7	0.30	101.087			
200.0	200.0	200.0	200.0	0.3	0.3	108.41	-9.5	28.5	30.0	29.3	0.65	46.445			
300.0	300.0	300.0	300.0	0.5	0.5	51.57	-9.5	28.5	28.6	27.6	1.00	28.641			
400.0	399.8	399.8	399.8	0.7	0.7	62.97	-9.5	28.5	25.1	23.8	1.37	18.388			
500.0	499.5	499.5	499.5	0.9	0.8	79.67	-9.5	28.5	22.8	21.0	1.75	12.978			
525.1	524.5	524.3	524.3	1.0	0.9	84.14	-9.5	28.6	22.6	20.7	1.85	12.203 CC, ES			
600.0	599.2	598.6	598.6	1.1	1.0	95.47	-10.2	30.0	23.9	21.8	2.14	11.182 SF			
700.0	698.9	697.8	697.6	1.3	1.2	103.50	-12.5	34.6	28.9	26.4	2.53	11.453			
800.0	798.7	796.7	796.2	1.5	1.4	104.79	-16.3	42.2	36.5	33.6	2.93	12.474			
900.0	898.4	895.2	894.0	1.8	1.6	102.43	-21.6	52.8	46.4	43.1	3.35	13.864			
1,000.0	998.1	993.1	990.7	2.0	1.9	98.59	-28.4	66.3	58.9	55.1	3.78	15.560			
1,100.0	1,097.9	1,091.0	1,086.9	2.2	2.2	94.56	-36.4	82.5	73.8	69.6	4.22	17.514			
1,200.0	1,197.6	1,189.7	1,183.7	2.4	2.6	91.67	-44.8	99.3	89.5	84.8	4.65	19.256			
1,300.0	1,297.3	1,288.3	1,280.6	2.6	2.9	89.64	-53.2	116.1	105.3	100.2	5.08	20.741			
1,400.0	1,397.0	1,387.0	1,377.5	2.8	3.3	88.14	-61.5	132.9	121.2	115.7	5.50	22.016			
1,500.0	1,496.8	1,485.7	1,474.4	3.1	3.6	86.99	-69.9	149.7	137.1	131.2	5.93	23.120			
1,600.0	1,596.5	1,584.4	1,571.3	3.3	4.0	86.08	-78.3	166.5	153.1	146.8	6.36	24.083			
1,700.0	1,696.2	1,683.1	1,668.2	3.5	4.3	85.34	-86.7	183.2	169.2	162.4	6.79	24.929			
1,800.0	1,796.0	1,781.8	1,765.1	3.7	4.7	84.73	-95.0	200.0	185.2	178.0	7.21	25.680			
1,900.0	1,895.7	1,880.5	1,861.9	3.9	5.1	84.22	-103.4	216.8	201.3	193.6	7.64	26.348			
2,000.0	1,995.4	1,979.1	1,958.8	4.1	5.4	83.78	-111.8	233.6	217.4	209.3	8.07	26.948			
2,100.0	2,095.1	2,077.8	2,055.7	4.4	5.8	83.40	-120.1	250.4	233.5	225.0	8.49	27.489			
2,200.0	2,194.9	2,176.5	2,152.6	4.6	6.2	83.08	-128.5	267.2	249.6	240.6	8.92	27.979			
2,300.0	2,294.6	2,275.2	2,249.5	4.8	6.5	82.79	-136.9	284.0	265.7	256.3	9.35	28.425			
2,400.0	2,394.3	2,373.9	2,346.4	5.0	6.9	82.53	-145.3	300.7	281.8	272.0	9.77	28.832			
2,500.0	2,494.1	2,472.6	2,443.3	5.2	7.3	82.31	-153.6	317.5	297.9	287.7	10.20	29.207			
2,600.0	2,593.8	2,571.3	2,540.2	5.4	7.6	82.10	-162.0	334.3	314.0	303.4	10.63	29.551			
2,700.0	2,693.5	2,669.9	2,637.0	5.7	8.0	81.92	-170.4	351.1	330.2	319.1	11.05	29.869			
2,800.0	2,793.3	2,768.6	2,733.9	5.9	8.4	81.75	-178.7	367.9	346.3	334.8	11.48	30.164			
2,900.0	2,893.0	2,867.3	2,830.8	6.1	8.8	81.60	-187.1	384.7	362.4	350.5	11.91	30.437			
3,000.0	2,992.7	2,966.0	2,927.7	6.3	9.1	81.46	-195.5	401.4	378.6	366.2	12.33	30.692			
3,100.0	3,092.4	3,064.7	3,024.6	6.5	9.5	81.33	-203.9	418.2	394.7	381.9	12.76	30.930			
3,200.0	3,192.2	3,163.4	3,121.5	6.7	9.9	81.21	-212.2	435.0	410.8	397.6	13.19	31.153			
3,300.0	3,291.9	3,262.1	3,218.4	7.0	10.2	81.10	-220.6	451.8	427.0	413.4	13.61	31.362			
3,400.0	3,391.6	3,360.7	3,315.2	7.2	10.6	81.00	-229.0	468.6	443.1	429.1	14.04	31.558			
3,500.0	3,491.4	3,459.4	3,412.1	7.4	11.0	80.91	-237.3	485.4	459.3	444.8	14.47	31.743			
3,600.0	3,591.1	3,558.1	3,509.0	7.6	11.4	80.82	-245.7	502.2	475.4	460.5	14.90	31.917			
3,700.0	3,690.8	3,656.8	3,605.9	7.8	11.7	80.74	-254.1	518.9	491.6	476.2	15.32	32.082			
3,800.0	3,790.5	3,755.5	3,702.8	8.0	12.1	80.66	-262.5	535.7	507.7	492.0	15.75	32.237			
3,900.0	3,890.3	3,854.2	3,799.7	8.3	12.5	80.59	-270.8	552.5	523.9	507.7	16.18	32.385			
4,000.0	3,990.0	3,952.9	3,896.6	8.5	12.8	80.52	-279.2	569.3	540.0	523.4	16.60	32.525			
4,100.0	4,089.7	4,051.5	3,993.5	8.7	13.2	80.46	-287.6	586.1	556.1	539.1	17.03	32.658			
4,200.0	4,189.5	4,150.2	4,090.3	8.9	13.6	80.40	-295.9	602.9	572.3	554.8	17.46	32.784			
4,300.0	4,289.2	4,248.9	4,187.2	9.1	14.0	80.34	-304.3	619.7	588.5	570.6	17.88	32.905			
4,400.0	4,388.9	4,347.6	4,284.1	9.3	14.3	80.29	-312.7	636.4	604.6	586.3	18.31	33.020			
4,500.0	4,488.6	4,446.3	4,381.0	9.6	14.7	80.24	-321.1	653.2	620.8	602.0	18.74	33.129			
4,600.0	4,588.4	4,545.0	4,477.9	9.8	15.1	80.19	-329.4	670.0	636.9	617.7	19.16	33.234			
4,700.0	4,688.1	4,643.7	4,574.8	10.0	15.5	80.14	-337.8	686.8	653.1	633.5	19.59	33.334			
4,800.0	4,787.8	4,742.3	4,671.7	10.2	15.8	80.10	-346.2	703.6	669.2	649.2	20.02	33.430			
4,900.0	4,887.6	4,841.0	4,768.5	10.4	16.2	80.06	-354.5	720.4	685.4	664.9	20.45	33.522			
5,000.0	4,987.3	4,939.7	4,865.4	10.6	16.6	80.02	-362.9	737.2	701.5	680.6	20.87	33.610			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
5,100.0	5,087.0	5,038.4	4,962.3	10.9	16.9	79.98	-371.3	753.9	717.7	696.4	21.30	33.695			
5,200.0	5,186.7	5,137.1	5,059.2	11.1	17.3	79.94	-379.7	770.7	733.8	712.1	21.73	33.777			
5,300.0	5,286.5	5,235.8	5,156.1	11.3	17.7	79.91	-388.0	787.5	750.0	727.8	22.15	33.855			
5,400.0	5,386.3	5,334.4	5,252.9	11.5	18.1	80.12	-396.4	804.3	766.5	743.9	22.57	33.960			
5,500.0	5,486.3	5,432.7	5,349.4	11.6	18.4	-99.87	-404.7	821.0	783.7	760.8	22.90	34.220			
5,600.0	5,586.3	5,530.8	5,445.7	11.8	18.8	-100.39	-413.0	837.7	801.3	778.1	23.17	34.575			
5,700.0	5,686.3	5,628.9	5,542.1	11.9	19.2	-100.95	-421.4	854.4	819.0	795.5	23.44	34.937			
5,800.0	5,786.3	5,727.0	5,638.4	12.0	19.6	-101.49	-429.7	871.1	836.7	813.0	23.71	35.294			
5,900.0	5,886.3	5,825.1	5,734.7	12.2	19.9	-102.00	-438.0	887.8	854.6	830.6	23.98	35.642			
6,000.0	5,986.3	5,923.2	5,831.0	12.3	20.3	-102.50	-446.3	904.4	872.5	848.2	24.25	35.982			
6,100.0	6,086.3	6,021.3	5,927.3	12.5	20.7	-102.97	-454.7	921.1	890.4	865.9	24.52	36.315			
6,200.0	6,186.3	6,119.5	6,023.7	12.6	21.0	-103.43	-463.0	937.8	908.4	883.6	24.79	36.639			
6,300.0	6,286.3	6,217.6	6,120.0	12.7	21.4	-103.87	-471.3	954.5	926.5	901.4	25.07	36.956			
6,400.0	6,386.3	6,315.7	6,216.3	12.9	21.8	-104.29	-479.6	971.2	944.6	919.3	25.35	37.266			
6,500.0	6,486.3	6,413.8	6,312.6	13.0	22.2	-104.70	-487.9	987.9	962.8	937.2	25.63	37.567			
6,600.0	6,586.3	6,511.9	6,409.0	13.2	22.5	-105.09	-496.3	1,004.6	981.0	955.1	25.91	37.862			
6,700.0	6,686.3	6,610.0	6,505.3	13.3	22.9	-105.46	-504.6	1,021.3	999.3	973.1	26.19	38.149			
6,800.0	6,786.3	6,708.1	6,601.6	13.5	23.3	-105.83	-512.9	1,037.9	1,017.6	991.1	26.48	38.429			
6,900.0	6,886.3	6,806.2	6,697.9	13.6	23.6	-106.18	-521.2	1,054.6	1,035.9	1,009.1	26.77	38.703			
7,000.0	6,986.3	6,904.3	6,794.2	13.8	24.0	-106.52	-529.6	1,071.3	1,054.3	1,027.2	27.05	38.969			
7,100.0	7,086.3	7,002.4	6,890.6	13.9	24.4	-106.84	-537.9	1,088.0	1,072.7	1,045.3	27.34	39.230			
7,200.0	7,186.3	7,100.5	6,986.9	14.1	24.8	-107.16	-546.2	1,104.7	1,091.1	1,063.5	27.63	39.483			
7,300.0	7,286.3	7,198.7	7,083.2	14.2	25.1	-107.46	-554.5	1,121.4	1,109.6	1,081.7	27.93	39.731			
7,400.0	7,386.3	7,296.8	7,179.5	14.4	25.5	-107.76	-562.8	1,138.1	1,128.1	1,099.9	28.22	39.973			
7,500.0	7,486.3	7,394.9	7,275.8	14.5	25.9	-108.05	-571.2	1,154.7	1,146.6	1,118.1	28.52	40.208			
7,600.0	7,586.3	7,493.0	7,372.2	14.7	26.2	-108.32	-579.5	1,171.4	1,165.2	1,136.4	28.81	40.438			
7,700.0	7,686.3	7,591.1	7,468.5	14.8	26.6	-108.59	-587.8	1,188.1	1,183.8	1,154.6	29.11	40.663			
7,800.0	7,786.3	7,689.2	7,564.8	15.0	27.0	-108.85	-596.1	1,204.8	1,202.4	1,173.0	29.41	40.882			
7,900.0	7,886.3	7,787.3	7,661.1	15.1	27.4	-109.10	-604.5	1,221.5	1,221.0	1,191.3	29.71	41.096			
8,000.0	7,986.3	7,885.4	7,757.4	15.3	27.7	-109.35	-612.8	1,238.2	1,239.6	1,209.6	30.01	41.304			
8,100.0	8,086.2	7,983.5	7,853.8	15.5	28.1	-109.58	-621.1	1,254.9	1,258.3	1,228.0	30.31	41.508			
8,200.0	8,186.2	8,081.6	7,950.1	15.6	28.5	-109.82	-629.4	1,271.6	1,277.0	1,246.4	30.62	41.707			
8,300.0	8,286.2	8,179.8	8,046.4	15.8	28.8	-110.04	-637.7	1,288.2	1,295.7	1,264.8	30.92	41.901			
8,400.0	8,386.2	8,277.9	8,142.7	15.9	29.2	-110.26	-646.1	1,304.9	1,314.4	1,283.2	31.23	42.091			
8,500.0	8,486.2	8,376.0	8,239.1	16.1	29.6	-110.47	-654.4	1,321.6	1,333.2	1,301.7	31.54	42.276			
8,600.0	8,586.2	8,533.9	8,394.6	16.2	30.1	-110.77	-666.5	1,345.9	1,350.4	1,318.5	31.93	42.292			
8,700.0	8,686.2	8,718.6	8,578.1	16.4	30.5	-111.01	-675.8	1,364.6	1,361.7	1,329.3	32.37	42.064			
8,800.0	8,786.2	8,905.4	8,764.6	16.5	30.8	-111.14	-679.9	1,372.8	1,366.7	1,333.9	32.82	41.639			
8,900.0	8,886.2	9,028.7	8,887.9	16.7	30.9	-111.16	-680.1	1,373.0	1,367.1	1,333.9	33.18	41.202			
9,000.0	8,986.2	9,130.9	8,990.1	16.9	31.0	-111.17	-680.4	1,372.5	1,367.1	1,333.6	33.50	40.804			
9,100.0	9,086.2	9,233.1	9,092.3	17.0	31.1	-111.15	-680.9	1,371.6	1,367.0	1,333.1	33.83	40.408			
9,200.0	9,186.2	9,333.8	9,193.1	17.2	31.1	-111.12	-681.6	1,370.4	1,366.7	1,332.5	34.15	40.015			
9,300.0	9,286.2	9,433.8	9,293.1	17.3	31.2	-111.09	-682.3	1,369.2	1,366.4	1,331.9	34.48	39.631			
9,400.0	9,386.2	9,533.8	9,393.0	17.5	31.3	-111.06	-683.0	1,368.0	1,366.1	1,331.3	34.80	39.253			
9,500.0	9,486.2	9,633.8	9,493.0	17.7	31.4	-111.03	-683.7	1,366.8	1,365.9	1,330.7	35.13	38.882			
9,600.0	9,586.2	9,733.8	9,593.0	17.8	31.5	-111.01	-684.4	1,365.6	1,365.6	1,330.1	35.45	38.517			
9,700.0	9,686.2	9,833.8	9,693.0	18.0	31.5	-110.98	-685.1	1,364.4	1,365.3	1,329.5	35.78	38.158			
9,800.0	9,786.2	9,933.8	9,793.0	18.1	31.6	-110.95	-685.8	1,363.2	1,365.1	1,328.9	36.11	37.805			
9,900.0	9,886.2	10,033.8	9,893.0	18.3	31.7	-110.92	-686.5	1,362.0	1,364.8	1,328.3	36.43	37.458			
10,000.0	9,986.2	10,133.8	9,993.0	18.5	31.8	-110.89	-687.1	1,360.8	1,364.5	1,327.7	36.76	37.117			
10,100.0	10,086.2	10,233.8	10,093.0	18.6	31.9	-110.86	-687.8	1,359.6	1,364.2	1,327.1	37.09	36.782			
10,200.0	10,186.2	10,333.8	10,192.9	18.8	32.0	-110.83	-688.5	1,358.4	1,364.0	1,326.5	37.42	36.452			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design												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	
10,300.0	10,286.2	10,433.8	10,292.9	18.9	32.1	-110.80	-689.2	1,357.2	1,363.7	1,325.9	37.75	36.127		
10,400.0	10,386.2	10,533.8	10,392.9	19.1	32.2	-110.77	-689.9	1,356.0	1,363.4	1,325.3	38.08	35.808		
10,500.0	10,486.2	10,633.8	10,492.9	19.3	32.2	-110.74	-690.6	1,354.8	1,363.2	1,324.7	38.41	35.494		
10,600.0	10,586.2	10,733.8	10,592.9	19.4	32.3	-110.71	-691.3	1,353.6	1,362.9	1,324.1	38.74	35.185		
10,700.0	10,686.2	10,833.8	10,692.9	19.6	32.4	-110.68	-692.0	1,352.4	1,362.6	1,323.5	39.07	34.880		
10,800.0	10,786.2	10,933.8	10,792.9	19.8	32.5	-110.65	-692.7	1,351.2	1,362.3	1,323.0	39.40	34.581		
10,900.0	10,886.2	11,033.8	10,892.9	19.9	32.6	-110.62	-693.4	1,350.0	1,362.1	1,322.4	39.73	34.286		
11,000.0	10,986.2	11,133.8	10,992.8	20.1	32.7	-110.59	-694.1	1,348.8	1,361.8	1,321.8	40.06	33.996		
11,100.0	11,086.2	11,233.8	11,092.8	20.2	32.8	-110.56	-694.7	1,347.6	1,361.5	1,321.2	40.39	33.711		
11,200.0	11,186.2	11,333.8	11,192.8	20.4	32.9	-110.53	-695.4	1,346.4	1,361.3	1,320.6	40.72	33.430		
11,300.0	11,286.2	11,433.8	11,292.8	20.6	33.0	-110.50	-696.1	1,345.2	1,361.0	1,320.0	41.05	33.153		
11,400.0	11,386.2	11,533.8	11,392.8	20.7	33.1	-110.47	-696.8	1,344.1	1,360.7	1,319.4	41.38	32.880		
11,500.0	11,486.2	11,633.8	11,492.8	20.9	33.2	-110.44	-697.5	1,342.9	1,360.5	1,318.8	41.72	32.612		
11,600.0	11,586.2	11,733.8	11,592.8	21.1	33.3	-110.41	-698.2	1,341.7	1,360.2	1,318.2	42.05	32.347		
11,700.0	11,686.2	11,833.8	11,692.8	21.2	33.4	-110.38	-698.9	1,340.5	1,359.9	1,317.6	42.38	32.087		
11,800.0	11,786.2	11,933.8	11,792.7	21.4	33.5	-110.35	-699.6	1,339.3	1,359.7	1,317.0	42.72	31.830		
11,865.4	11,851.5	11,999.1	11,858.1	21.5	33.5	-110.33	-700.0	1,338.5	1,359.5	1,316.6	42.93	31.665		
11,900.0	11,886.2	12,002.0	11,861.0	21.6	33.5	-110.33	-700.1	1,338.4	1,359.8	1,316.8	43.00	31.625		
11,924.8	11,911.0	12,002.0	11,861.0	21.6	33.5	-110.33	-700.1	1,338.4	1,360.5	1,317.5	43.04	31.612		

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	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)					
0.0	0.0	0.0	0.0	0.0	0.0	-71.76	4.7	-14.4	15.1						
100.0	100.0	100.0	100.0	0.1	0.1	-71.76	4.7	-14.4	15.1	14.8	0.30	50.994			
200.0	200.0	200.0	200.0	0.3	0.3	-71.76	4.7	-14.4	15.1	14.5	0.65	23.430 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	-137.46	4.7	-14.4	16.7	15.7	1.00	16.714			
400.0	399.8	399.8	399.8	0.7	0.7	-148.75	4.7	-14.4	21.8	20.4	1.35	16.109 SF			
500.0	499.5	499.5	499.5	0.9	0.8	-156.50	4.7	-14.4	28.3	26.6	1.70	16.646			
600.0	599.2	599.2	599.2	1.1	1.0	-161.28	4.7	-14.4	35.2	33.1	2.05	17.169			
700.0	698.9	698.9	698.9	1.3	1.2	-164.49	4.7	-14.4	42.2	39.8	2.40	17.612			
800.0	798.7	798.7	798.7	1.5	1.4	-166.78	4.7	-14.4	49.4	46.6	2.75	17.979			
900.0	898.4	898.4	898.4	1.8	1.5	-168.48	4.7	-14.4	56.6	53.5	3.09	18.283			
1,000.0	998.1	998.1	998.1	2.0	1.7	-169.80	4.7	-14.4	63.8	60.3	3.44	18.536			
1,100.0	1,097.9	1,099.0	1,098.9	2.2	1.9	-172.10	3.6	-13.1	70.3	66.5	3.79	18.545			
1,200.0	1,197.6	1,199.7	1,199.6	2.4	2.1	-176.46	0.1	-9.2	75.5	71.3	4.14	18.225			
1,300.0	1,297.3	1,300.2	1,299.6	2.6	2.3	177.39	-5.7	-2.6	80.0	75.5	4.51	17.738			
1,400.0	1,397.0	1,400.0	1,398.7	2.8	2.5	169.67	-13.8	6.4	84.8	79.9	4.92	17.236			
1,500.0	1,496.8	1,499.1	1,496.6	3.1	2.7	160.77	-24.1	18.0	90.9	85.5	5.39	16.875			
1,600.0	1,596.5	1,597.1	1,592.8	3.3	3.0	151.29	-36.5	31.9	99.5	93.6	5.92	16.818			
1,700.0	1,696.2	1,693.9	1,687.1	3.5	3.4	141.95	-50.9	48.1	111.5	105.1	6.49	17.192			
1,800.0	1,796.0	1,789.3	1,779.3	3.7	3.8	133.33	-67.1	66.3	127.5	120.5	7.06	18.053			
1,900.0	1,895.7	1,883.3	1,869.4	3.9	4.2	125.76	-85.1	86.5	147.7	140.1	7.62	19.394			
2,000.0	1,995.4	1,979.1	1,960.8	4.1	4.7	119.58	-104.3	107.9	170.7	162.6	8.13	20.990			
2,100.0	2,095.1	2,075.0	2,052.2	4.4	5.1	114.88	-123.4	129.4	195.2	186.6	8.62	22.649			
2,200.0	2,194.9	2,170.8	2,143.6	4.6	5.6	111.22	-142.5	150.9	220.7	211.6	9.09	24.293			
2,300.0	2,294.6	2,266.6	2,235.1	4.8	6.1	108.32	-161.7	172.4	246.9	237.3	9.54	25.884			
2,400.0	2,394.3	2,362.5	2,326.5	5.0	6.6	105.97	-180.8	193.8	273.5	263.5	9.98	27.403			
2,500.0	2,494.1	2,458.3	2,417.9	5.2	7.1	104.04	-199.9	215.3	300.5	290.1	10.42	28.844			
2,600.0	2,593.8	2,554.1	2,509.3	5.4	7.7	102.43	-219.1	236.8	327.8	316.9	10.85	30.205			
2,700.0	2,693.5	2,650.0	2,600.7	5.7	8.2	101.06	-238.2	258.2	355.2	344.0	11.28	31.489			
2,800.0	2,793.3	2,745.8	2,692.1	5.9	8.7	99.89	-257.3	279.7	382.9	371.2	11.71	32.697			
2,900.0	2,893.0	2,841.6	2,783.5	6.1	9.2	98.87	-276.5	301.2	410.6	398.5	12.14	33.836			
3,000.0	2,992.7	2,937.5	2,875.0	6.3	9.7	97.99	-295.6	322.6	438.5	425.9	12.56	34.909			
3,100.0	3,092.4	3,033.3	2,966.4	6.5	10.3	97.21	-314.7	344.1	466.5	453.5	12.99	35.920			
3,200.0	3,192.2	3,129.1	3,057.8	6.7	10.8	96.51	-333.8	365.6	494.5	481.1	13.41	36.875			
3,300.0	3,291.9	3,225.0	3,149.2	7.0	11.3	95.89	-353.0	387.0	522.6	508.7	13.83	37.778			
3,400.0	3,391.6	3,320.8	3,240.6	7.2	11.9	95.34	-372.1	408.5	550.7	536.4	14.26	38.631			
3,500.0	3,491.4	3,416.6	3,332.0	7.4	12.4	94.84	-391.2	430.0	578.9	564.2	14.68	39.439			
3,600.0	3,591.1	3,512.4	3,423.4	7.6	12.9	94.38	-410.4	451.4	607.1	592.0	15.10	40.205			
3,700.0	3,690.8	3,608.3	3,514.9	7.8	13.5	93.97	-429.5	472.9	635.3	619.8	15.52	40.933			
3,800.0	3,790.5	3,704.1	3,606.3	8.0	14.0	93.59	-448.6	494.4	663.6	647.7	15.94	41.624			
3,900.0	3,890.3	3,799.9	3,697.7	8.3	14.5	93.24	-467.8	515.8	691.9	675.5	16.36	42.281			
4,000.0	3,990.0	3,895.8	3,789.1	8.5	15.1	92.92	-486.9	537.3	720.2	703.4	16.79	42.907			
4,100.0	4,089.7	3,991.6	3,880.5	8.7	15.6	92.62	-506.0	558.8	748.5	731.3	17.21	43.504			
4,200.0	4,189.5	4,087.4	3,971.9	8.9	16.1	92.35	-525.2	580.2	776.9	759.3	17.63	44.073			
4,300.0	4,289.2	4,183.3	4,063.4	9.1	16.7	92.09	-544.3	601.7	805.3	787.2	18.05	44.617			
4,400.0	4,388.9	4,279.1	4,154.8	9.3	17.2	91.85	-563.4	623.2	833.7	815.2	18.47	45.137			
4,500.0	4,488.6	4,374.9	4,246.2	9.6	17.7	91.63	-582.6	644.6	862.1	843.2	18.89	45.635			
4,600.0	4,588.4	4,470.8	4,337.6	9.8	18.3	91.42	-601.7	666.1	890.5	871.2	19.31	46.111			
4,700.0	4,688.1	4,566.6	4,429.0	10.0	18.8	91.22	-620.8	687.6	918.9	899.2	19.73	46.568			
4,800.0	4,787.8	4,662.4	4,520.4	10.2	19.3	91.04	-639.9	709.1	947.3	927.2	20.15	47.007			
4,900.0	4,887.6	4,758.3	4,611.8	10.4	19.9	90.87	-659.1	730.5	975.7	955.2	20.57	47.428			
5,000.0	4,987.3	4,854.1	4,703.3	10.6	20.4	90.70	-678.2	752.0	1,004.2	983.2	20.99	47.833			
5,100.0	5,087.0	4,949.9	4,794.7	10.9	21.0	90.55	-697.3	773.5	1,032.6	1,011.2	21.41	48.222			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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		
5,200.0	5,186.7	5,045.7	4,886.1	11.1	21.5	90.40	-716.5	794.9	1,061.1	1,039.3	21.84	48.596			
5,300.0	5,286.5	5,141.6	4,977.5	11.3	22.0	90.26	-735.6	816.4	1,089.6	1,067.3	22.26	48.957			
5,400.0	5,386.3	5,237.3	5,068.9	11.5	22.6	90.73	-754.7	837.8	1,118.0	1,095.3	22.76	49.127			
5,500.0	5,486.3	5,332.8	5,159.9	11.6	23.1	-88.99	-773.8	859.2	1,146.5	1,123.3	23.16	49.500			
5,600.0	5,586.3	5,428.2	5,250.9	11.8	23.6	-89.41	-792.8	880.6	1,175.0	1,151.5	23.44	50.124			
5,700.0	5,686.3	5,523.5	5,341.9	11.9	24.2	-89.88	-811.9	902.0	1,203.5	1,179.8	23.71	50.768			
5,800.0	5,786.3	5,618.9	5,432.8	12.0	24.7	-90.35	-830.9	923.3	1,232.2	1,208.2	23.97	51.406			
5,900.0	5,886.3	5,714.2	5,523.7	12.2	25.2	-90.79	-849.9	944.7	1,260.9	1,236.7	24.24	52.029			
6,000.0	5,986.3	5,809.5	5,614.7	12.3	25.8	-91.22	-868.9	966.0	1,289.7	1,265.2	24.50	52.638			
6,100.0	6,086.3	5,904.8	5,705.6	12.5	26.3	-91.62	-888.0	987.4	1,318.6	1,293.8	24.77	53.233			
6,200.0	6,186.3	6,000.2	5,796.5	12.6	26.9	-92.01	-907.0	1,008.7	1,347.5	1,322.5	25.04	53.815			
6,300.0	6,286.3	6,095.5	5,887.5	12.7	27.4	-92.39	-926.0	1,030.1	1,376.5	1,351.2	25.31	54.384			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
D21 595 Pad - LR06D D21 595 - DD - Plan #2													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	108.58	-4.7	14.1	14.9	14.6	0.30	50.093		
100.0	100.0	100.0	100.0	0.1	0.1	108.58	-4.7	14.1	14.9	14.6	0.65	23.016		
200.0	200.0	200.0	200.0	0.3	0.3	108.58	-4.7	14.1	14.9	14.2	0.98	14.898 CC		
294.0	294.0	293.7	293.7	0.5	0.5	59.44	-6.2	14.4	14.6	13.6	1.00	14.584 ES		
300.0	300.0	299.7	299.6	0.5	0.5	60.91	-6.4	14.4	14.6	13.6	1.37	12.696 SF		
400.0	399.8	398.8	398.7	0.7	0.7	87.81	-10.5	16.5	17.4	16.1	1.76	14.422		
500.0	499.5	497.9	497.4	0.9	0.9	100.87	-16.0	21.8	25.3	23.6	2.16	16.694		
600.0	599.2	596.6	595.6	1.1	1.1	103.14	-22.9	30.2	36.1	33.9	2.58	19.013		
700.0	698.9	694.8	692.7	1.3	1.4	101.28	-31.0	41.6	49.0	46.5	3.01	21.417		
800.0	798.7	792.2	788.6	1.5	1.8	98.01	-40.4	55.9	64.4	61.4	3.44	23.966		
900.0	898.4	888.6	883.0	1.8	2.2	94.45	-51.0	73.0	82.4	79.0	3.86	26.706		
1,000.0	998.1	984.3	975.8	2.0	2.6	91.04	-62.8	92.8	103.1	99.3	4.29	29.192		
1,100.0	1,097.9	1,081.7	1,070.1	2.2	3.0	88.40	-75.2	114.0	125.1	120.8	4.71	31.280		
1,200.0	1,197.6	1,179.1	1,164.3	2.4	3.5	86.55	-87.6	135.2	147.3	142.6	5.13	33.047		
1,300.0	1,297.3	1,276.6	1,258.6	2.6	3.9	85.19	-100.1	156.4	169.5	164.4	5.55	34.559		
1,400.0	1,397.0	1,374.0	1,352.9	2.8	4.4	84.14	-112.5	177.6	191.9	186.3	5.97	35.867		
1,500.0	1,496.8	1,471.4	1,447.1	3.1	4.9	83.31	-124.9	198.9	214.2	208.3	6.39	37.007		
1,600.0	1,596.5	1,568.8	1,541.4	3.3	5.3	82.64	-137.4	220.1	236.6	230.2	6.82	38.010		
1,700.0	1,696.2	1,666.3	1,635.7	3.5	5.8	82.08	-149.8	241.3	259.1	252.3	7.24	38.898		
1,800.0	1,796.0	1,763.7	1,729.9	3.7	6.2	81.61	-162.2	262.5	281.5	274.3	7.66	39.691		
1,900.0	1,895.7	1,861.1	1,824.2	3.9	6.7	81.21	-174.7	283.7	304.0	296.3	8.08	40.402		
2,000.0	1,995.4	1,958.5	1,918.5	4.1	7.2	80.87	-187.1	304.9	326.5	318.4	8.50	41.044		
2,100.0	2,095.1	2,055.9	2,012.8	4.4	7.6	80.57	-199.5	326.1	349.0	340.5	8.92	41.625		
2,200.0	2,194.9	2,153.4	2,107.0	4.6	8.1	80.31	-212.0	347.3	371.5	362.6	9.35	42.155		
2,300.0	2,294.6	2,250.8	2,201.3	4.8	8.6	80.07	-224.4	368.6	394.0	384.6	9.77	42.640		
2,400.0	2,394.3	2,348.2	2,295.6	5.0	9.0	79.86	-236.8	389.8	416.5	406.7	10.19	43.085		
2,500.0	2,494.1	2,445.6	2,389.8	5.2	9.5	79.68	-249.2	411.0	439.0	428.8	10.61	43.494		
2,600.0	2,593.8	2,543.1	2,484.1	5.4	10.0	79.51	-261.7	432.2	461.5	450.9	11.03	43.873		
2,700.0	2,693.5	2,640.5	2,578.4	5.7	10.5	79.36	-274.1	453.4	484.1	473.0	11.46	44.224		
2,800.0	2,793.3	2,737.9	2,672.6	5.9	10.9	79.22	-286.5	474.6	506.6	495.1	11.88	44.550		
2,900.0	2,893.0	2,835.3	2,766.9	6.1	11.4	79.09	-299.0	495.8	529.1	517.2	12.30	44.854		
3,000.0	2,992.7	2,932.7	2,861.2	6.3	11.9	78.97	-311.4	517.1	551.7	539.4	12.72	45.138		
3,100.0	3,092.4	3,030.2	2,955.4	6.5	12.3	78.87	-323.8	538.3	574.2	561.5	13.14	45.403		
3,200.0	3,192.2	3,127.6	3,049.7	6.7	12.8	78.77	-336.3	559.5	596.7	583.6	13.56	45.653		
3,300.0	3,291.9	3,225.0	3,144.0	7.0	13.3	78.67	-348.7	580.7	619.3	605.7	13.99	45.887		
3,400.0	3,391.6	3,322.4	3,238.2	7.2	13.7	78.59	-361.1	601.9	641.8	627.8	14.41	46.108		
3,500.0	3,491.4	3,419.9	3,332.5	7.4	14.2	78.51	-373.6	623.1	664.3	649.9	14.83	46.316		
3,600.0	3,591.1	3,517.3	3,426.8	7.6	14.7	78.43	-386.0	644.3	686.9	672.1	15.25	46.512		
3,700.0	3,690.8	3,614.7	3,521.0	7.8	15.2	78.36	-398.4	665.6	709.4	694.2	15.67	46.699		
3,800.0	3,790.5	3,712.1	3,615.3	8.0	15.6	78.30	-410.9	686.8	732.0	716.3	16.10	46.875		
3,900.0	3,890.3	3,809.5	3,709.6	8.3	16.1	78.24	-423.3	708.0	754.5	738.4	16.52	47.042		
4,000.0	3,990.0	3,907.0	3,803.9	8.5	16.6	78.18	-435.7	729.2	777.1	760.5	16.94	47.201		
4,100.0	4,089.7	4,004.4	3,898.1	8.7	17.0	78.12	-448.2	750.4	799.6	782.7	17.36	47.353		
4,200.0	4,189.5	4,101.8	3,992.4	8.9	17.5	78.07	-460.6	771.6	822.2	804.8	17.78	47.497		
4,300.0	4,289.2	4,199.2	4,086.7	9.1	18.0	78.02	-473.0	792.8	844.7	826.9	18.21	47.634		
4,400.0	4,388.9	4,296.7	4,180.9	9.3	18.4	77.97	-485.4	814.0	867.3	849.1	18.63	47.766		
4,500.0	4,488.6	4,394.1	4,275.2	9.6	18.9	77.93	-497.9	835.3	889.8	871.2	19.05	47.891		
4,600.0	4,588.4	4,491.5	4,369.5	9.8	19.4	77.89	-510.3	856.5	912.4	893.3	19.47	48.011		
4,700.0	4,688.1	4,588.9	4,463.7	10.0	19.9	77.85	-522.7	877.7	934.9	915.4	19.89	48.126		
4,800.0	4,787.8	4,686.3	4,558.0	10.2	20.3	77.81	-535.2	898.9	957.5	937.6	20.32	48.237		
4,900.0	4,887.6	4,783.8	4,652.3	10.4	20.8	77.77	-547.6	920.1	980.0	959.7	20.74	48.342		
5,000.0	4,987.3	4,881.2	4,746.5	10.6	21.3	77.74	-560.0	941.3	1,002.6	981.8				

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well LR04D D21 595
Project:	Garfield County	TVD Reference:	KBE @ 8278.0ft (Original Well Elev)
Reference Site:	D21 595 Pad	MD Reference:	KBE @ 8278.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LR04D D21 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 #2	Offset TVD Reference:	Offset Datum

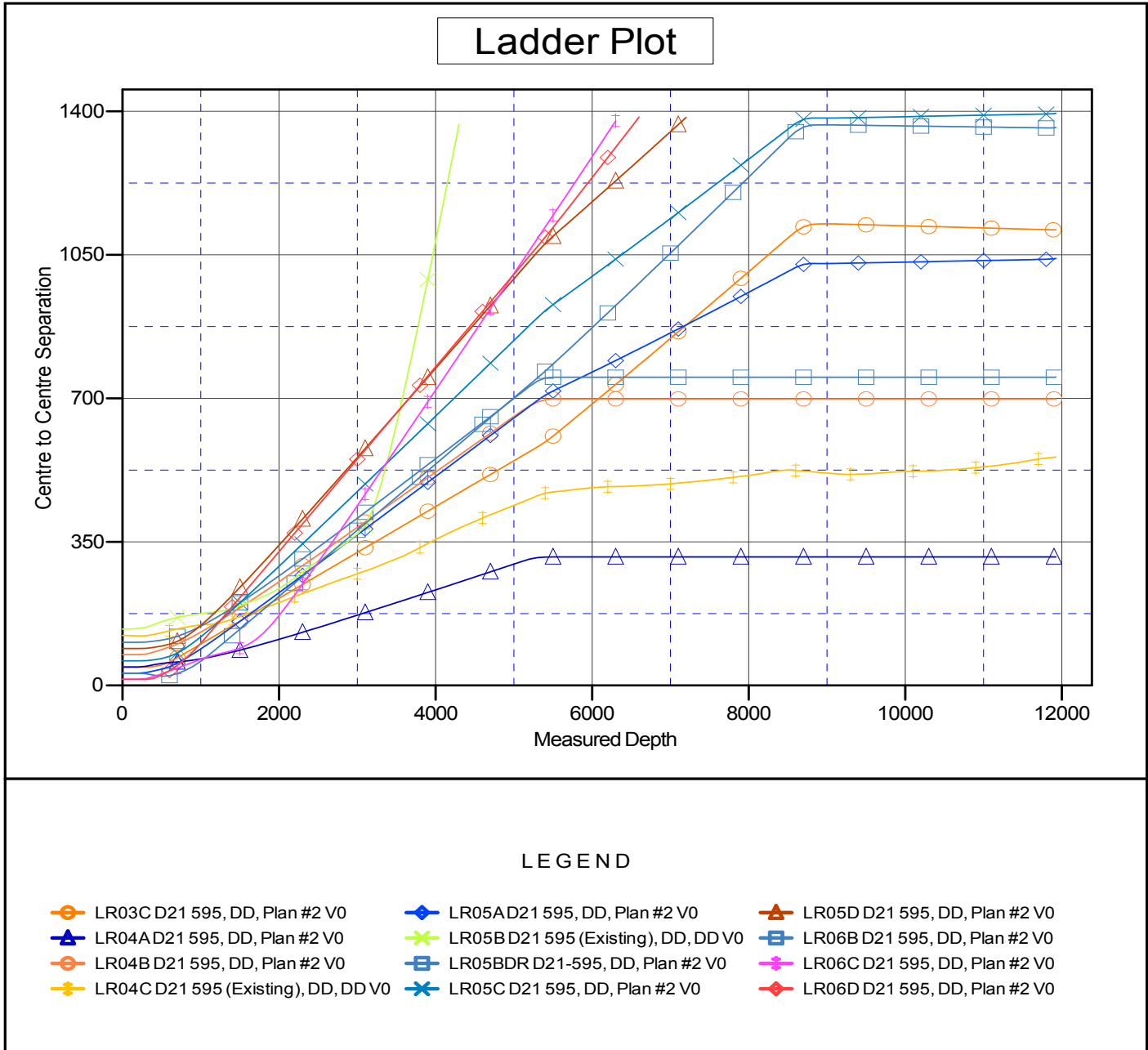
Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
5,100.0	5,087.0	4,978.6	4,840.8	10.9	21.7	77.71	-572.5	962.5	1,025.1	1,003.9	21.16	48.444			
5,200.0	5,186.7	5,076.0	4,935.1	11.1	22.2	77.67	-584.9	983.8	1,047.7	1,026.1	21.58	48.542			
5,300.0	5,286.5	5,173.5	5,029.3	11.3	22.7	77.64	-597.3	1,005.0	1,070.2	1,048.2	22.00	48.635			
5,400.0	5,386.3	5,270.8	5,123.5	11.5	23.1	78.06	-609.7	1,026.2	1,093.2	1,070.7	22.47	48.650			
5,500.0	5,486.3	5,367.7	5,217.2	11.6	23.6	-101.67	-622.1	1,047.3	1,117.0	1,094.1	22.84	48.895			
5,600.0	5,586.3	5,464.4	5,310.8	11.8	24.1	-102.01	-634.5	1,068.3	1,141.2	1,118.0	23.12	49.359			
5,700.0	5,686.3	5,561.1	5,404.4	11.9	24.6	-102.41	-646.8	1,089.4	1,165.5	1,142.1	23.38	49.842			
5,800.0	5,786.3	5,657.7	5,497.9	12.0	25.0	-102.79	-659.1	1,110.4	1,189.8	1,166.2	23.65	50.317			
5,900.0	5,886.3	5,754.4	5,591.5	12.2	25.5	-103.16	-671.5	1,131.5	1,214.2	1,190.3	23.91	50.780			
6,000.0	5,986.3	5,851.1	5,685.1	12.3	26.0	-103.52	-683.8	1,152.5	1,238.6	1,214.5	24.18	51.229			
6,100.0	6,086.3	5,947.8	5,778.6	12.5	26.4	-103.86	-696.1	1,173.6	1,263.1	1,238.7	24.45	51.666			
6,200.0	6,186.3	6,044.5	5,872.2	12.6	26.9	-104.19	-708.5	1,194.6	1,287.6	1,262.9	24.72	52.092			
6,300.0	6,286.3	6,141.2	5,965.7	12.7	27.4	-104.51	-720.8	1,215.7	1,312.2	1,287.2	24.99	52.505			
6,400.0	6,386.3	6,237.8	6,059.3	12.9	27.8	-104.82	-733.2	1,236.7	1,336.8	1,311.5	25.27	52.907			
6,500.0	6,486.3	6,334.5	6,152.8	13.0	28.3	-105.11	-745.5	1,257.8	1,361.4	1,335.9	25.54	53.298			
6,600.0	6,586.3	6,431.2	6,246.4	13.2	28.8	-105.40	-757.8	1,278.8	1,386.1	1,360.3	25.82	53.678			

Cathedral Energy Services

Anticollision Report

Company: Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference: Well LR04D D21 595	Well LR04D D21 595
Project: Garfield County	TVD Reference: KBE @ 8278.0ft (Original Well Elev)	Well Error: 0.0ft
Reference Site: D21 595 Pad	MD Reference: KBE @ 8278.0ft (Original Well Elev)	Reference Wellbore: DD
Site Error: 0.0ft	North Reference: True	Reference Design: Plan #2
Reference Well: LR04D D21 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 #2	Offset TVD Reference: Offset Datum	

Reference Depths are relative to KBE @ 8278.0ft (Original Well Elev) Coordinates are relative to: LR04D D21 595
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Central Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: -1.62°



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