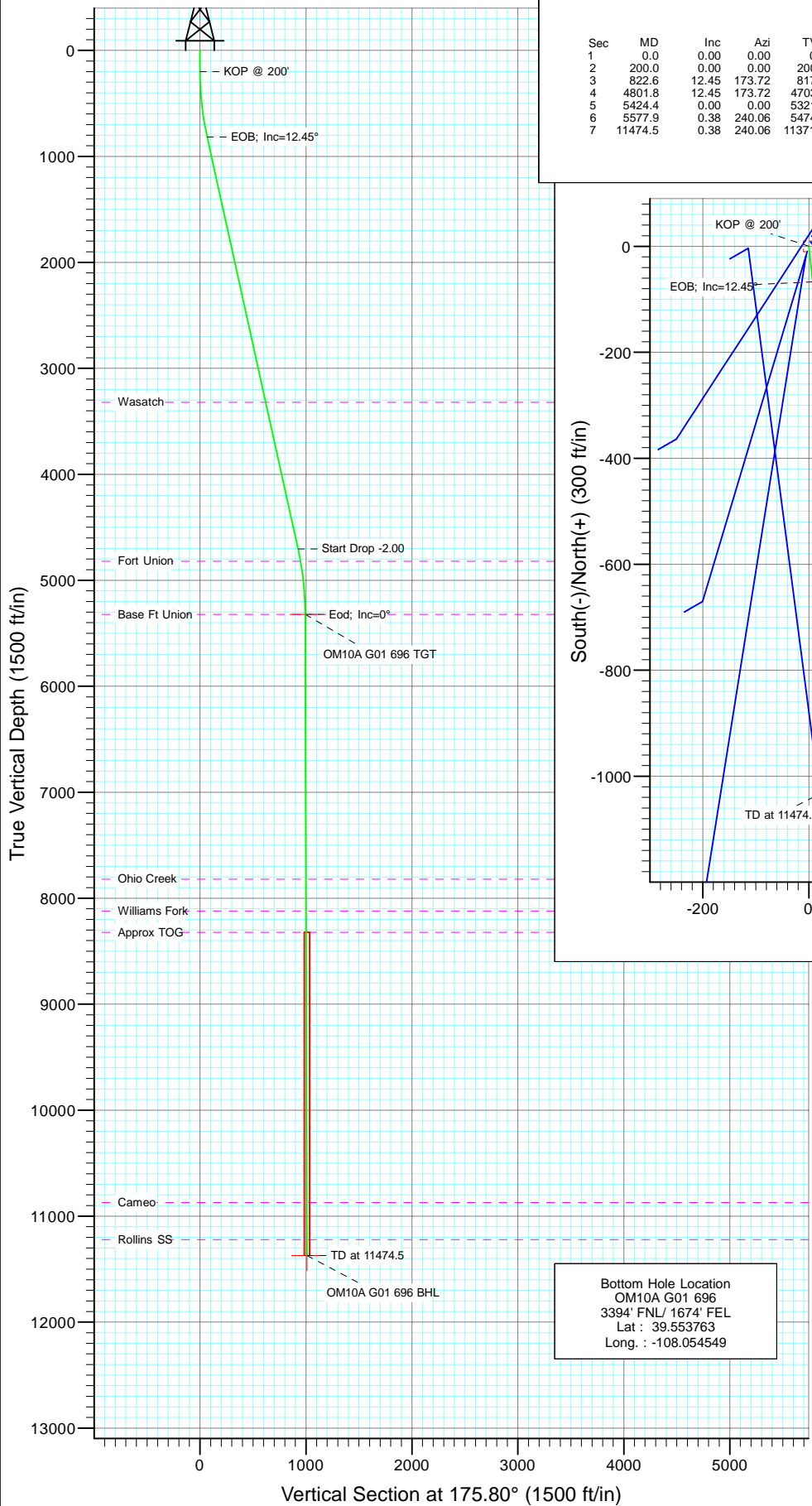
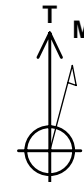
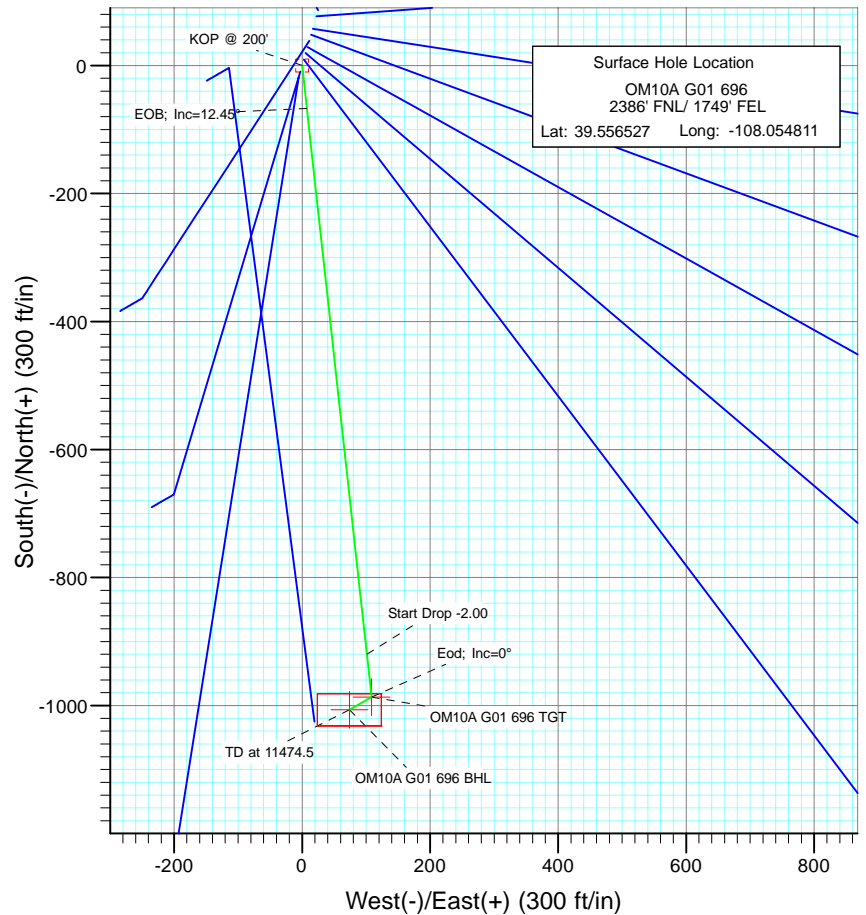




Project: Garfield County
Site: G01 696 Pad
Well: OM10A G01 696
Wellbore: DD
Design: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	822.6	12.45	173.72	817.7	-67.0	7.4	2.00	173.72	67.3	
4	4801.8	12.45	173.72	4703.3	-919.8	101.2	0.00	0.00	924.8	
5	5424.4	0.00	0.00	5321.0	-986.8	108.5	2.00	180.00	992.1	OM10A G01 696 TGT
6	5577.9	0.38	240.06	5474.5	-987.1	108.1	0.25	240.06	992.3	
7	11474.5	0.38	240.06	11371.0	-1006.8	73.9	0.00	0.00	1009.5	OM10A G01 696 BHL



Azimuths to True North
Magnetic North: 10.47°

Magnetic Field
Strength: 52371.6snT
Dip Angle: 65.81°
Date: 8/12/2010
Model: IGRF200510

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3321.0	3386.2	Wasatch
4821.0	4921.8	Fort Union
5321.0	5424.4	Base Ft Union
7821.0	7924.4	Ohio Creek
8121.0	8224.4	Williams Fork
8321.0	8424.4	Approx TOG
10871.0	10974.5	Cameo
11221.0	11324.5	Rollins SS

DESIGN DETAILS: Plan #1

105XXX; BH
KBE @ 8352.0ft (Patterson 302)

Target	Azimuth	Origin	N/S	E/W	From TVD
OM10A G01 696 BHL	175.80	Slot	0.0	0.0	0.0

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well OM10A G01 696
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site:	G01 696 Pad	North Reference:	True
Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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

Site	G01 696 Pad			
Site Position:		Northing:	1,636,699.44 ft	Latitude: 39.553712
From:	Lat/Long	Easting:	2,279,741.26 ft	Longitude: -108.054742
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.61 °

Well	OM10A G01 696			
Well Position	+N/-S	0.0 ft	Northing:	1,637,724.93 ft
	+E/-W	0.0 ft	Easting:	2,279,750.64 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	8,337.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/12/2010	10.47	65.81	52,372

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	175.80

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	
822.6	12.45	173.72	817.7	-67.0	7.4	2.00	2.00	0.00	173.72	
4,801.8	12.45	173.72	4,703.3	-919.8	101.2	0.00	0.00	0.00	0.00	
5,424.4	0.00	0.00	5,321.0	-986.8	108.5	2.00	-2.00	0.00	180.00	OM10A G01 696 TGT
5,577.9	0.38	240.06	5,474.5	-987.1	108.1	0.25	0.25	-78.12	240.06	
11,474.5	0.38	240.06	11,371.0	-1,006.8	73.9	0.00	0.00	0.00	0.00	OM10A G01 696 BHL

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well OM10A G01 696
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site:	G01 696 Pad	North Reference:	True
Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
30.0	0.00	0.00	30.0	0.0	0.0	0.0	0.00	0.00	
60.0	0.00	0.00	60.0	0.0	0.0	0.0	0.00	0.00	
90.0	0.00	0.00	90.0	0.0	0.0	0.0	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
210.0	0.20	173.72	210.0	0.0	0.0	0.0	2.00	2.00	
240.0	0.80	173.72	240.0	-0.3	0.0	0.3	2.00	2.00	
270.0	1.40	173.72	270.0	-0.9	0.1	0.9	2.00	2.00	
300.0	2.00	173.72	300.0	-1.7	0.2	1.7	2.00	2.00	
330.0	2.60	173.72	330.0	-2.9	0.3	2.9	2.00	2.00	
360.0	3.20	173.72	359.9	-4.4	0.5	4.5	2.00	2.00	
390.0	3.80	173.72	389.9	-6.3	0.7	6.3	2.00	2.00	
420.0	4.40	173.72	419.8	-8.4	0.9	8.4	2.00	2.00	
450.0	5.00	173.72	449.7	-10.8	1.2	10.9	2.00	2.00	
480.0	5.60	173.72	479.6	-13.6	1.5	13.7	2.00	2.00	
510.0	6.20	173.72	509.4	-16.7	1.8	16.7	2.00	2.00	
540.0	6.80	173.72	539.2	-20.0	2.2	20.1	2.00	2.00	
570.0	7.40	173.72	569.0	-23.7	2.6	23.8	2.00	2.00	
600.0	8.00	173.72	598.7	-27.7	3.0	27.9	2.00	2.00	
630.0	8.60	173.72	628.4	-32.0	3.5	32.2	2.00	2.00	
660.0	9.20	173.72	658.0	-36.6	4.0	36.8	2.00	2.00	
690.0	9.80	173.72	687.6	-41.6	4.6	41.8	2.00	2.00	
720.0	10.40	173.72	717.1	-46.8	5.1	47.0	2.00	2.00	
750.0	11.00	173.72	746.6	-52.3	5.8	52.6	2.00	2.00	
780.0	11.60	173.72	776.0	-58.2	6.4	58.5	2.00	2.00	
810.0	12.20	173.72	805.4	-64.3	7.1	64.7	2.00	2.00	
822.6	12.45	173.72	817.7	-67.0	7.4	67.3	2.00	2.00	EOB; Inc=12.45°
840.0	12.45	173.72	834.7	-70.7	7.8	71.1	0.00	0.00	
870.0	12.45	173.72	864.0	-77.1	8.5	77.6	0.00	0.00	
900.0	12.45	173.72	893.3	-83.6	9.2	84.0	0.00	0.00	
930.0	12.45	173.72	922.6	-90.0	9.9	90.5	0.00	0.00	
960.0	12.45	173.72	951.9	-96.4	10.6	97.0	0.00	0.00	
990.0	12.45	173.72	981.2	-102.9	11.3	103.4	0.00	0.00	
1,020.0	12.45	173.72	1,010.5	-109.3	12.0	109.9	0.00	0.00	
1,050.0	12.45	173.72	1,039.8	-115.7	12.7	116.3	0.00	0.00	
1,080.0	12.45	173.72	1,069.1	-122.2	13.4	122.8	0.00	0.00	
1,110.0	12.45	173.72	1,098.4	-128.6	14.1	129.3	0.00	0.00	
1,140.0	12.45	173.72	1,127.6	-135.0	14.9	135.7	0.00	0.00	
1,170.0	12.45	173.72	1,156.9	-141.4	15.6	142.2	0.00	0.00	
1,200.0	12.45	173.72	1,186.2	-147.9	16.3	148.7	0.00	0.00	
1,230.0	12.45	173.72	1,215.5	-154.3	17.0	155.1	0.00	0.00	
1,260.0	12.45	173.72	1,244.8	-160.7	17.7	161.6	0.00	0.00	
1,290.0	12.45	173.72	1,274.1	-167.2	18.4	168.1	0.00	0.00	
1,320.0	12.45	173.72	1,303.4	-173.6	19.1	174.5	0.00	0.00	
1,350.0	12.45	173.72	1,332.7	-180.0	19.8	181.0	0.00	0.00	
1,380.0	12.45	173.72	1,362.0	-186.4	20.5	187.4	0.00	0.00	
1,410.0	12.45	173.72	1,391.3	-192.9	21.2	193.9	0.00	0.00	
1,440.0	12.45	173.72	1,420.6	-199.3	21.9	200.4	0.00	0.00	
1,470.0	12.45	173.72	1,449.9	-205.7	22.6	206.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well OM10A G01 696
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site:	G01 696 Pad	North Reference:	True
Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
1,500.0	12.45	173.72	1,479.2	-212.2	23.3	213.3	0.00	0.00	
1,530.0	12.45	173.72	1,508.5	-218.6	24.0	219.8	0.00	0.00	
1,560.0	12.45	173.72	1,537.8	-225.0	24.8	226.2	0.00	0.00	
1,590.0	12.45	173.72	1,567.1	-231.5	25.5	232.7	0.00	0.00	
1,620.0	12.45	173.72	1,596.4	-237.9	26.2	239.2	0.00	0.00	
1,650.0	12.45	173.72	1,625.6	-244.3	26.9	245.6	0.00	0.00	
1,680.0	12.45	173.72	1,654.9	-250.7	27.6	252.1	0.00	0.00	
1,710.0	12.45	173.72	1,684.2	-257.2	28.3	258.6	0.00	0.00	
1,740.0	12.45	173.72	1,713.5	-263.6	29.0	265.0	0.00	0.00	
1,770.0	12.45	173.72	1,742.8	-270.0	29.7	271.5	0.00	0.00	
1,800.0	12.45	173.72	1,772.1	-276.5	30.4	277.9	0.00	0.00	
1,830.0	12.45	173.72	1,801.4	-282.9	31.1	284.4	0.00	0.00	
1,860.0	12.45	173.72	1,830.7	-289.3	31.8	290.9	0.00	0.00	
1,890.0	12.45	173.72	1,860.0	-295.8	32.5	297.3	0.00	0.00	
1,920.0	12.45	173.72	1,889.3	-302.2	33.2	303.8	0.00	0.00	
1,950.0	12.45	173.72	1,918.6	-308.6	33.9	310.3	0.00	0.00	
1,980.0	12.45	173.72	1,947.9	-315.0	34.7	316.7	0.00	0.00	
2,010.0	12.45	173.72	1,977.2	-321.5	35.4	323.2	0.00	0.00	
2,040.0	12.45	173.72	2,006.5	-327.9	36.1	329.7	0.00	0.00	
2,070.0	12.45	173.72	2,035.8	-334.3	36.8	336.1	0.00	0.00	
2,100.0	12.45	173.72	2,065.1	-340.8	37.5	342.6	0.00	0.00	
2,130.0	12.45	173.72	2,094.4	-347.2	38.2	349.1	0.00	0.00	
2,160.0	12.45	173.72	2,123.7	-353.6	38.9	355.5	0.00	0.00	
2,190.0	12.45	173.72	2,152.9	-360.1	39.6	362.0	0.00	0.00	
2,220.0	12.45	173.72	2,182.2	-366.5	40.3	368.4	0.00	0.00	
2,250.0	12.45	173.72	2,211.5	-372.9	41.0	374.9	0.00	0.00	
2,280.0	12.45	173.72	2,240.8	-379.3	41.7	381.4	0.00	0.00	
2,310.0	12.45	173.72	2,270.1	-385.8	42.4	387.8	0.00	0.00	
2,340.0	12.45	173.72	2,299.4	-392.2	43.1	394.3	0.00	0.00	
2,370.0	12.45	173.72	2,328.7	-398.6	43.8	400.8	0.00	0.00	
2,400.0	12.45	173.72	2,358.0	-405.1	44.6	407.2	0.00	0.00	
2,430.0	12.45	173.72	2,387.3	-411.5	45.3	413.7	0.00	0.00	
2,460.0	12.45	173.72	2,416.6	-417.9	46.0	420.2	0.00	0.00	
2,490.0	12.45	173.72	2,445.9	-424.3	46.7	426.6	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
- hit/miss target									
- Shape									
OM10A G01 696 BHL	0.00	0.00	11,371.0	-1,006.8	73.9	1,636,716.48	2,279,796.18	39.553763	-108.054549
- plan misses target center by 8944.1ft at 2490.0ft MD (2445.9 TVD, -424.3 N, 46.7 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									
OM10A G01 696 TGT	0.00	0.00	5,321.0	-986.8	108.5	1,636,735.46	2,279,831.40	39.553818	-108.054426
- plan misses target center by 2930.3ft at 2490.0ft MD (2445.9 TVD, -424.3 N, 46.7 E)									
- Point									

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well OM10A G01 696
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site:	G01 696 Pad	North Reference:	True
Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
2,500.0	12.45	173.72	2,455.7	-426.5	46.9	428.8	0.00	0.00	
2,600.0	12.45	173.72	2,553.3	-447.9	49.3	450.3	0.00	0.00	
2,700.0	12.45	173.72	2,651.0	-469.4	51.6	471.9	0.00	0.00	
2,800.0	12.45	173.72	2,748.6	-490.8	54.0	493.4	0.00	0.00	
2,900.0	12.45	173.72	2,846.2	-512.2	56.3	515.0	0.00	0.00	
3,000.0	12.45	173.72	2,943.9	-533.7	58.7	536.5	0.00	0.00	
3,100.0	12.45	173.72	3,041.5	-555.1	61.1	558.1	0.00	0.00	
3,200.0	12.45	173.72	3,139.2	-576.5	63.4	579.6	0.00	0.00	
3,300.0	12.45	173.72	3,236.8	-597.9	65.8	601.2	0.00	0.00	
3,386.2	12.45	173.72	3,321.0	-616.4	67.8	619.7	0.00	0.00	Wasatch
3,400.0	12.45	173.72	3,334.5	-619.4	68.1	622.7	0.00	0.00	
3,500.0	12.45	173.72	3,432.1	-640.8	70.5	644.3	0.00	0.00	
3,600.0	12.45	173.72	3,529.8	-662.2	72.8	665.8	0.00	0.00	
3,700.0	12.45	173.72	3,627.4	-683.7	75.2	687.3	0.00	0.00	
3,800.0	12.45	173.72	3,725.1	-705.1	77.6	708.9	0.00	0.00	
3,900.0	12.45	173.72	3,822.7	-726.5	79.9	730.4	0.00	0.00	
4,000.0	12.45	173.72	3,920.4	-748.0	82.3	752.0	0.00	0.00	
4,100.0	12.45	173.72	4,018.0	-769.4	84.6	773.5	0.00	0.00	
4,200.0	12.45	173.72	4,115.7	-790.8	87.0	795.1	0.00	0.00	
4,300.0	12.45	173.72	4,213.3	-812.3	89.4	816.6	0.00	0.00	
4,400.0	12.45	173.72	4,311.0	-833.7	91.7	838.2	0.00	0.00	
4,500.0	12.45	173.72	4,408.6	-855.1	94.1	859.7	0.00	0.00	
4,600.0	12.45	173.72	4,506.3	-876.6	96.4	881.3	0.00	0.00	
4,700.0	12.45	173.72	4,603.9	-898.0	98.8	902.8	0.00	0.00	
4,800.0	12.45	173.72	4,701.6	-919.4	101.1	924.4	0.00	0.00	
4,801.8	12.45	173.72	4,703.3	-919.8	101.2	924.8	0.00	0.00	Start Drop -2.00
4,900.0	10.49	173.72	4,799.5	-939.2	103.3	944.3	2.00	-2.00	
4,921.8	10.05	173.72	4,821.0	-943.1	103.7	948.2	2.00	-2.00	Fort Union
5,000.0	8.49	173.72	4,898.2	-955.6	105.1	960.7	2.00	-2.00	
5,100.0	6.49	173.72	4,997.3	-968.6	106.5	973.8	2.00	-2.00	
5,200.0	4.49	173.72	5,096.9	-978.1	107.6	983.3	2.00	-2.00	
5,300.0	2.49	173.72	5,196.7	-984.1	108.3	989.4	2.00	-2.00	
5,400.0	0.49	173.72	5,296.6	-986.7	108.5	992.0	2.00	-2.00	
5,424.4	0.00	0.00	5,321.0	-986.8	108.5	992.1	2.00	-2.00	Eod; Inc=0° - Base Ft Union - OM10A G01 696
5,500.0	0.19	240.06	5,396.6	-986.9	108.4	992.2	0.25	0.25	
5,577.9	0.38	240.06	5,474.5	-987.1	108.1	992.3	0.25	0.25	
5,600.0	0.38	240.06	5,496.6	-987.1	108.0	992.4	0.00	0.00	
5,700.0	0.38	240.06	5,596.6	-987.5	107.4	992.7	0.00	0.00	
5,800.0	0.38	240.06	5,696.6	-987.8	106.8	993.0	0.00	0.00	
5,900.0	0.38	240.06	5,796.6	-988.1	106.2	993.3	0.00	0.00	
6,000.0	0.38	240.06	5,896.6	-988.5	105.7	993.5	0.00	0.00	
6,100.0	0.38	240.06	5,996.6	-988.8	105.1	993.8	0.00	0.00	
6,200.0	0.38	240.06	6,096.6	-989.1	104.5	994.1	0.00	0.00	
6,300.0	0.38	240.06	6,196.6	-989.5	103.9	994.4	0.00	0.00	
6,400.0	0.38	240.06	6,296.6	-989.8	103.3	994.7	0.00	0.00	
6,500.0	0.38	240.06	6,396.6	-990.1	102.8	995.0	0.00	0.00	
6,600.0	0.38	240.06	6,496.6	-990.5	102.2	995.3	0.00	0.00	
6,700.0	0.38	240.06	6,596.6	-990.8	101.6	995.6	0.00	0.00	
6,800.0	0.38	240.06	6,696.6	-991.1	101.0	995.9	0.00	0.00	
6,900.0	0.38	240.06	6,796.6	-991.5	100.4	996.2	0.00	0.00	
7,000.0	0.38	240.06	6,896.6	-991.8	99.8	996.5	0.00	0.00	
7,100.0	0.38	240.06	6,996.6	-992.1	99.3	996.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well OM10A G01 696
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site:	G01 696 Pad	North Reference:	True
Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,200.0	0.38	240.06	7,096.6	-992.5	98.7	997.0	0.00	0.00	
7,300.0	0.38	240.06	7,196.6	-992.8	98.1	997.3	0.00	0.00	
7,400.0	0.38	240.06	7,296.6	-993.1	97.5	997.6	0.00	0.00	
7,500.0	0.38	240.06	7,396.6	-993.5	96.9	997.9	0.00	0.00	
7,600.0	0.38	240.06	7,496.6	-993.8	96.4	998.2	0.00	0.00	
7,700.0	0.38	240.06	7,596.6	-994.2	95.8	998.5	0.00	0.00	
7,800.0	0.38	240.06	7,696.6	-994.5	95.2	998.8	0.00	0.00	
7,900.0	0.38	240.06	7,796.6	-994.8	94.6	999.1	0.00	0.00	
7,924.4	0.38	240.06	7,821.0	-994.9	94.5	999.1	0.00	0.00	Ohio Creek
8,000.0	0.38	240.06	7,896.6	-995.2	94.0	999.4	0.00	0.00	
8,100.0	0.38	240.06	7,996.6	-995.5	93.5	999.7	0.00	0.00	
8,200.0	0.38	240.06	8,096.6	-995.8	92.9	999.9	0.00	0.00	
8,224.4	0.38	240.06	8,121.0	-995.9	92.7	1,000.0	0.00	0.00	Williams Fork
8,300.0	0.38	240.06	8,196.6	-996.2	92.3	1,000.2	0.00	0.00	
8,400.0	0.38	240.06	8,296.6	-996.5	91.7	1,000.5	0.00	0.00	
8,424.4	0.38	240.06	8,321.0	-996.6	91.6	1,000.6	0.00	0.00	Approx TOG
8,500.0	0.38	240.06	8,396.6	-996.8	91.1	1,000.8	0.00	0.00	
8,600.0	0.38	240.06	8,496.6	-997.2	90.6	1,001.1	0.00	0.00	
8,700.0	0.38	240.06	8,596.6	-997.5	90.0	1,001.4	0.00	0.00	
8,800.0	0.38	240.06	8,696.5	-997.8	89.4	1,001.7	0.00	0.00	
8,900.0	0.38	240.06	8,796.5	-998.2	88.8	1,002.0	0.00	0.00	
9,000.0	0.38	240.06	8,896.5	-998.5	88.2	1,002.3	0.00	0.00	
9,100.0	0.38	240.06	8,996.5	-998.8	87.7	1,002.6	0.00	0.00	
9,200.0	0.38	240.06	9,096.5	-999.2	87.1	1,002.9	0.00	0.00	
9,300.0	0.38	240.06	9,196.5	-999.5	86.5	1,003.2	0.00	0.00	
9,400.0	0.38	240.06	9,296.5	-999.8	85.9	1,003.4	0.00	0.00	
9,500.0	0.38	240.06	9,396.5	-1,000.2	85.3	1,003.7	0.00	0.00	
9,600.0	0.38	240.06	9,496.5	-1,000.5	84.8	1,004.0	0.00	0.00	
9,700.0	0.38	240.06	9,596.5	-1,000.8	84.2	1,004.3	0.00	0.00	
9,800.0	0.38	240.06	9,696.5	-1,001.2	83.6	1,004.6	0.00	0.00	
9,900.0	0.38	240.06	9,796.5	-1,001.5	83.0	1,004.9	0.00	0.00	
10,000.0	0.38	240.06	9,896.5	-1,001.8	82.4	1,005.2	0.00	0.00	
10,100.0	0.38	240.06	9,996.5	-1,002.2	81.9	1,005.5	0.00	0.00	
10,200.0	0.38	240.06	10,096.5	-1,002.5	81.3	1,005.8	0.00	0.00	
10,300.0	0.38	240.06	10,196.5	-1,002.8	80.7	1,006.1	0.00	0.00	
10,400.0	0.38	240.06	10,296.5	-1,003.2	80.1	1,006.4	0.00	0.00	
10,500.0	0.38	240.06	10,396.5	-1,003.5	79.5	1,006.6	0.00	0.00	
10,600.0	0.38	240.06	10,496.5	-1,003.8	79.0	1,006.9	0.00	0.00	
10,700.0	0.38	240.06	10,596.5	-1,004.2	78.4	1,007.2	0.00	0.00	
10,800.0	0.38	240.06	10,696.5	-1,004.5	77.8	1,007.5	0.00	0.00	
10,900.0	0.38	240.06	10,796.5	-1,004.8	77.2	1,007.8	0.00	0.00	
10,974.5	0.38	240.06	10,871.0	-1,005.1	76.8	1,008.0	0.00	0.00	Cameo
11,000.0	0.38	240.06	10,896.5	-1,005.2	76.6	1,008.1	0.00	0.00	
11,100.0	0.38	240.06	10,996.5	-1,005.5	76.0	1,008.4	0.00	0.00	
11,200.0	0.38	240.06	11,096.5	-1,005.9	75.5	1,008.7	0.00	0.00	
11,300.0	0.38	240.06	11,196.5	-1,006.2	74.9	1,009.0	0.00	0.00	
11,324.5	0.38	240.06	11,221.0	-1,006.3	74.7	1,009.0	0.00	0.00	Rollins SS
11,400.0	0.38	240.06	11,296.5	-1,006.5	74.3	1,009.3	0.00	0.00	
11,474.5	0.38	240.06	11,371.0	-1,006.8	73.9	1,009.5	0.00	0.00	TD at 11474.5 - OM10A G01 696 BHL

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well OM10A G01 696
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Project:	Garfield County	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site:	G01 696 Pad	North Reference:	True
Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
OM10A G01 696 BHL	0.00	0.00	11,371.0	-1,006.8	73.9	1,636,716.48	2,279,796.18	39.553763	-108.054549
- plan hits target center									
- Rectangle (sides W50.0 H100.0 D0.0)									
OM10A G01 696 TGT	0.00	0.00	5,321.0	-986.8	108.5	1,636,735.46	2,279,831.40	39.553818	-108.054426
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
3,386.2	3,321.0	Wasatch		0.00		
4,921.8	4,821.0	Fort Union		0.00		
5,424.4	5,321.0	Base Ft Union		0.00		
7,924.4	7,821.0	Ohio Creek		0.00		
8,224.4	8,121.0	Williams Fork		0.00		
8,424.4	8,321.0	Approx TOG		0.00		
10,974.5	10,871.0	Cameo		0.00		
11,324.5	11,221.0	Rollins SS		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
200.0	200.0	0.0	0.0	KOP @ 200'	
822.6	817.7	-67.0	7.4	EOB; Inc=12.45°	
4,801.8	4,703.3	-919.8	101.2	Start Drop -2.00	
5,424.4	5,321.0	-986.8	108.5	Eod; Inc=0°	
11,474.5	11,371.0	-1,006.8	73.9	TD at 11474.5	

Berry Petroleum Company (NAD 83)

Garfield County

G01 696 Pad

OM10A G01 696

DD

Plan #1

Anticollision Report

12 August, 2010

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	8/12/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,474.5	Plan #1 (DD)	MWD	Geolink MWD	

Summary						
Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
G01 696 Pad						
OM07C G01 696 - DD - Plan #1						Out of range
OM07D G01 696 - DD - Plan #1	200.0	200.0	89.9	89.2	139.207	CC, ES
OM07D G01 696 - DD - Plan #1	400.0	399.8	96.4	95.0	71.644	SF
OM08C G01 696 - DD - Plan #1	200.0	200.0	59.9	59.3	92.762	CC, ES
OM08C G01 696 - DD - Plan #1	600.0	596.1	90.7	88.5	40.698	SF
OM08D G01 696 - DD - Plan #1	200.0	200.0	80.0	79.4	123.905	CC, ES
OM08D G01 696 - DD - Plan #1	500.0	499.5	94.7	93.0	55.838	SF
OM09A G01 696 - DD - Plan #1	200.0	200.0	50.0	49.4	77.461	CC, ES
OM09A G01 696 - DD - Plan #1	700.0	696.5	91.1	88.3	32.561	SF
OM09B G01 696 - DD - Plan #1	200.0	200.0	30.0	29.3	46.445	CC, ES
OM09B G01 696 - DD - Plan #1	600.0	599.3	52.2	49.9	22.932	SF
OM09C G01 696 - DD - Plan #1	200.0	200.0	9.9	9.2	15.301	CC, ES
OM09C G01 696 - DD - Plan #1	500.0	500.4	16.4	14.6	9.085	SF
OM09D G01 696 - DD - Plan #1	200.0	200.0	20.1	19.5	31.144	CC, ES
OM09D G01 696 - DD - Plan #1	600.0	600.1	37.5	35.2	16.338	SF
OM10B G01 696 - DD - Plan #1	200.0	200.0	40.2	39.6	62.288	CC, ES
OM10B G01 696 - DD - Plan #1	700.0	702.2	76.1	73.7	31.821	SF
OM10C G01 696 - DD - Plan #1	200.0	200.0	9.9	9.2	15.301	CC
OM10C G01 696 - DD - Plan #1	300.0	299.7	10.0	9.0	10.088	ES
OM10C G01 696 - DD - Plan #1	600.0	598.3	16.2	13.9	7.163	SF
OM10D G01 696 - DD - Plan #1	200.0	200.0	20.1	19.5	31.150	CC
OM10D G01 696 - DD - Plan #1	300.0	299.3	20.2	19.2	20.349	ES
OM10D G01 696 - DD - Plan #1	1,100.0	1,095.5	37.0	31.2	6.358	SF

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design G01 696 Pad - OM07D G01 696 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	16.21	86.3	25.1	89.9					
100.0	100.0	100.0	100.0	0.1	0.1	16.21	86.3	25.1	89.9	89.6	0.30	302.979		
200.0	200.0	200.0	200.0	0.3	0.3	16.21	86.3	25.1	89.9	89.2	0.65	139.207 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-157.92	86.3	25.1	91.5	90.5	1.00	91.968		
400.0	399.8	399.8	399.8	0.7	0.7	-159.05	86.3	25.1	96.4	95.0	1.35	71.644 SF		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design G01 696 Pad - OM08C G01 696 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	16.12	57.5	16.6	59.9					
100.0	100.0	100.0	100.0	0.1	0.1	16.12	57.5	16.6	59.9	59.6	0.30	201.893		
200.0	200.0	200.0	200.0	0.3	0.3	16.12	57.5	16.6	59.9	59.3	0.65	92.762 CC, ES		
300.0	300.0	299.7	299.7	0.5	0.5	-156.60	57.3	18.3	61.7	60.7	1.00	61.857		
400.0	399.8	399.1	399.0	0.7	0.7	-153.95	56.5	23.5	67.4	66.0	1.37	49.210		
500.0	499.5	498.0	497.5	0.9	0.9	-150.39	55.2	31.9	77.0	75.2	1.77	43.377		
600.0	598.7	596.1	594.9	1.2	1.2	-146.67	53.3	43.7	90.7	88.5	2.23	40.698 SF		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design G01 696 Pad - OM08D G01 696 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	16.16	76.9	22.3	80.0					
100.0	100.0	100.0	100.0	0.1	0.1	16.16	76.9	22.3	80.0	79.7	0.30	269.676		
200.0	200.0	200.0	200.0	0.3	0.3	16.16	76.9	22.3	80.0	79.4	0.65	123.905 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-158.01	76.9	22.3	81.6	80.6	1.00	82.039		
400.0	399.8	399.8	399.8	0.7	0.7	-159.28	76.9	22.3	86.5	85.2	1.35	64.307		
500.0	499.5	499.5	499.5	0.9	0.8	-161.09	76.9	22.3	94.7	93.0	1.70	55.838 SF		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design G01 696 Pad - OM09A G01 696 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	16.03	48.1	13.8	50.0					
100.0	100.0	100.0	100.0	0.1	0.1	16.03	48.1	13.8	50.0	49.7	0.30	168.591		
200.0	200.0	200.0	200.0	0.3	0.3	16.03	48.1	13.8	50.0	49.4	0.65	77.461	CC, ES	
300.0	300.0	300.1	300.1	0.5	0.5	-156.48	47.5	15.5	51.5	50.5	1.00	51.569		
400.0	399.8	400.0	399.8	0.7	0.7	-153.23	45.7	20.4	56.1	54.8	1.37	40.912		
500.0	499.5	499.5	498.9	0.9	0.9	-148.88	42.7	28.5	64.1	62.3	1.78	35.939		
600.0	598.7	598.4	597.1	1.2	1.2	-144.35	38.5	39.8	75.7	73.5	2.25	33.591		
700.0	697.5	696.5	694.0	1.5	1.5	-140.23	33.2	54.1	91.1	88.3	2.80	32.561	SF	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													G01 696 Pad - OM09B G01 696 - DD - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)							
0.0	0.0	0.0	0.0	0.0	0.0	16.38	28.8	8.5	30.0								
100.0	100.0	100.0	100.0	0.1	0.1	16.38	28.8	8.5	30.0	29.7	0.30	101.087					
200.0	200.0	200.0	200.0	0.3	0.3	16.38	28.8	8.5	30.0	29.3	0.65	46.445 CC, ES					
300.0	300.0	300.2	300.2	0.5	0.5	-155.43	27.9	10.0	31.2	30.2	1.00	31.259					
400.0	399.8	400.3	400.1	0.7	0.7	-150.54	25.4	14.6	35.1	33.8	1.37	25.579					
500.0	499.5	500.0	499.5	0.9	0.9	-144.47	21.1	22.2	42.0	40.2	1.79	23.461					
600.0	598.7	599.3	598.0	1.2	1.2	-138.74	15.2	32.7	52.2	49.9	2.28	22.932 SF					
700.0	697.5	698.0	695.5	1.5	1.5	-134.00	7.7	46.2	65.7	62.9	2.84	23.119					
800.0	795.6	796.0	791.7	1.9	1.9	-130.29	-1.3	62.4	82.5	79.0	3.49	23.626					
822.6	817.7	818.2	813.4	2.0	1.9	-129.66	-3.5	66.3	86.7	83.1	3.64	23.793					

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													G01 696 Pad - OM09C G01 696 - DD - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation					
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor					
0.0	0.0	0.0	0.0	0.0	0.0	16.58	9.5	2.8	9.9								
100.0	100.0	100.0	100.0	0.1	0.1	16.58	9.5	2.8	9.9	9.6	0.30	33.303					
200.0	200.0	200.0	200.0	0.3	0.3	16.58	9.5	2.8	9.9	9.2	0.65	15.301	CC, ES				
300.0	300.0	300.2	300.2	0.5	0.5	-153.13	8.1	3.9	10.5	9.5	1.00	10.495					
400.0	399.8	400.3	400.2	0.7	0.7	-143.60	3.9	7.0	12.5	11.1	1.37	9.112					
500.0	499.5	500.4	499.8	0.9	0.9	-133.44	-3.1	12.3	16.4	14.6	1.80	9.085	SF				
600.0	598.7	600.3	599.0	1.2	1.2	-125.46	-12.8	19.6	22.3	20.0	2.32	9.615					
700.0	697.5	700.0	697.4	1.5	1.5	-119.89	-25.3	29.0	30.2	27.3	2.93	10.310					
800.0	795.6	799.4	795.0	1.9	1.9	-116.06	-40.4	40.5	40.1	36.5	3.65	10.998					
822.6	817.7	821.8	816.9	2.0	2.0	-115.38	-44.2	43.3	42.6	38.8	3.82	11.142					
900.0	893.3	898.5	891.6	2.3	2.3	-112.49	-58.2	53.9	51.4	47.0	4.44	11.584					
1,000.0	990.9	997.8	988.0	2.7	2.7	-108.87	-77.2	68.3	63.2	58.0	5.26	12.032					
1,100.0	1,088.6	1,097.0	1,084.3	3.1	3.2	-106.39	-96.2	82.6	75.2	69.1	6.07	12.381					
1,200.0	1,186.2	1,196.3	1,180.6	3.5	3.6	-104.59	-115.3	97.0	87.3	80.4	6.89	12.659					
1,300.0	1,283.9	1,295.5	1,277.0	3.9	4.1	-103.23	-134.3	111.4	99.4	91.7	7.71	12.884					

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design G01 696 Pad - OM09D G01 696 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	16.28	19.3	5.6	20.1					
100.0	100.0	100.0	100.0	0.1	0.1	16.28	19.3	5.6	20.1	19.8	0.30	67.784		
200.0	200.0	200.0	200.0	0.3	0.3	16.28	19.3	5.6	20.1	19.5	0.65	31.144 CC, ES		
300.0	300.0	300.3	300.3	0.5	0.5	-154.90	18.2	7.0	21.0	20.0	1.00	21.051		
400.0	399.8	400.4	400.3	0.7	0.7	-148.49	14.8	11.0	24.0	22.6	1.37	17.469		
500.0	499.5	500.4	499.9	0.9	0.9	-140.84	9.1	17.6	29.4	27.6	1.80	16.360		
600.0	598.7	600.1	598.8	1.2	1.2	-133.99	1.2	26.9	37.5	35.2	2.29	16.338 SF		
700.0	697.5	699.4	696.8	1.5	1.5	-128.60	-8.8	38.7	48.4	45.5	2.88	16.767		
800.0	795.6	798.2	793.8	1.9	1.9	-124.58	-21.0	53.0	61.9	58.4	3.57	17.345		
822.6	817.7	820.4	815.6	2.0	2.0	-123.83	-24.1	56.6	65.4	61.6	3.74	17.484		
900.0	893.3	896.5	889.7	2.3	2.3	-121.18	-35.3	69.8	77.6	73.2	4.33	17.918		
1,000.0	990.9	995.1	985.5	2.7	2.7	-118.26	-50.3	87.5	93.7	88.6	5.11	18.343		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design G01 696 Pad - OM10B G01 696 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	16.28	38.6	11.3	40.2					
100.0	100.0	100.0	100.0	0.1	0.1	16.28	38.6	11.3	40.2	39.9	0.30	135.567		
200.0	200.0	200.0	200.0	0.3	0.3	16.28	38.6	11.3	40.2	39.6	0.65	62.288 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-158.34	38.6	11.3	41.8	40.8	1.00	42.051		
400.0	399.8	399.8	399.8	0.7	0.7	-160.68	38.6	11.3	46.7	45.4	1.34	34.760		
500.0	499.5	499.5	499.5	0.9	0.8	-163.63	38.6	11.3	55.0	53.4	1.69	32.495		
600.0	598.7	600.8	600.8	1.2	1.0	-167.26	37.1	10.3	65.3	63.2	2.04	31.939		
700.0	697.5	702.2	702.1	1.5	1.2	-171.70	32.6	7.4	76.1	73.7	2.39	31.821 SF		
800.0	795.6	803.7	803.1	1.9	1.4	-176.54	25.1	2.5	87.8	85.0	2.74	32.022		
822.6	817.7	826.0	825.3	2.0	1.5	-177.59	23.2	1.3	90.7	87.8	2.82	32.144		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design G01 696 Pad - OM10C G01 696 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-163.42	-9.5	-2.8	9.9					
100.0	100.0	100.0	100.0	0.1	0.1	-163.42	-9.5	-2.8	9.9	9.6	0.30	33.303		
200.0	200.0	200.0	200.0	0.3	0.3	-163.42	-9.5	-2.8	9.9	9.2	0.65	15.301 CC		
300.0	300.0	299.7	299.6	0.5	0.5	26.73	-11.1	-3.3	10.0	9.0	0.99	10.088 ES		
400.0	399.8	399.3	399.1	0.7	0.7	37.44	-16.1	-4.8	10.8	9.4	1.35	7.950		
500.0	499.5	498.8	498.3	0.9	0.9	51.67	-24.4	-7.3	12.6	10.9	1.76	7.197		
600.0	598.7	598.3	597.0	1.2	1.2	64.87	-36.0	-10.7	16.2	13.9	2.26	7.163 SF		
700.0	697.5	697.8	695.3	1.5	1.5	74.99	-50.7	-15.2	21.4	18.5	2.87	7.451		
800.0	795.6	797.5	793.7	1.9	1.8	86.45	-66.5	-19.9	27.1	23.5	3.59	7.544		
822.6	817.7	820.0	815.9	2.0	1.9	89.33	-70.0	-20.9	28.5	24.8	3.77	7.573		
900.0	893.3	897.1	891.9	2.3	2.1	97.88	-82.2	-24.6	33.8	29.5	4.34	7.798		
1,000.0	990.9	996.7	990.1	2.7	2.5	105.48	-97.9	-29.3	41.4	36.4	5.04	8.229		
1,100.0	1,088.6	1,096.3	1,088.3	3.1	2.8	110.67	-113.7	-34.0	49.6	43.9	5.71	8.683		
1,200.0	1,186.2	1,195.9	1,186.6	3.5	3.1	114.38	-129.4	-38.7	58.0	51.6	6.37	9.107		
1,300.0	1,283.9	1,295.4	1,284.8	3.9	3.4	117.14	-145.2	-43.4	66.6	59.6	7.01	9.490		
1,400.0	1,381.5	1,395.0	1,383.0	4.3	3.8	119.26	-160.9	-48.1	75.3	67.6	7.66	9.829		
1,500.0	1,479.2	1,494.6	1,481.2	4.7	4.1	120.95	-176.6	-52.8	84.1	75.8	8.30	10.129		
1,600.0	1,576.8	1,594.2	1,579.4	5.1	4.4	122.31	-192.4	-57.5	92.9	84.0	8.94	10.396		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design G01 696 Pad - OM10D G01 696 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-163.72	-19.3	-5.6	20.1					
100.0	100.0	100.0	100.0	0.1	0.1	-163.72	-19.3	-5.6	20.1	19.8	0.30	67.798		
200.0	200.0	200.0	200.0	0.3	0.3	-163.72	-19.3	-5.6	20.1	19.5	0.65	31.150 CC		
300.0	300.0	299.3	299.3	0.5	0.5	23.82	-21.0	-5.9	20.2	19.2	0.99	20.349 ES		
400.0	399.8	398.6	398.4	0.7	0.7	27.53	-26.1	-6.7	20.6	19.3	1.35	15.312		
500.0	499.5	497.9	497.3	0.9	0.9	33.34	-34.6	-8.1	21.5	19.7	1.72	12.492		
600.0	598.7	597.1	595.8	1.2	1.2	40.64	-46.4	-9.9	23.0	20.8	2.14	10.734		
700.0	697.5	696.3	693.9	1.5	1.5	48.56	-61.7	-12.4	25.4	22.7	2.66	9.540		
800.0	795.6	796.2	792.2	1.9	1.8	58.93	-78.5	-15.0	27.5	24.1	3.34	8.213		
822.6	817.7	818.7	814.5	2.0	1.9	61.91	-82.3	-15.6	27.8	24.3	3.53	7.888		
900.0	893.3	896.0	890.6	2.3	2.1	72.01	-95.3	-17.7	29.5	25.3	4.18	7.043		
1,000.0	990.9	995.7	988.9	2.7	2.5	83.10	-112.1	-20.4	32.8	27.7	5.03	6.515		
1,100.0	1,088.6	1,095.5	1,087.2	3.1	2.8	91.91	-128.9	-23.0	37.0	31.2	5.83	6.358 SF		
1,200.0	1,186.2	1,195.3	1,185.5	3.5	3.1	98.78	-145.7	-25.7	42.0	35.5	6.57	6.393		
1,300.0	1,283.9	1,295.0	1,283.8	3.9	3.5	104.13	-162.5	-28.4	47.5	40.2	7.28	6.523		
1,400.0	1,381.5	1,394.8	1,382.1	4.3	3.8	108.35	-179.3	-31.0	53.2	45.3	7.95	6.697		
1,500.0	1,479.2	1,494.5	1,480.4	4.7	4.2	111.73	-196.1	-33.7	59.3	50.6	8.61	6.886		
1,600.0	1,576.8	1,594.3	1,578.7	5.1	4.5	114.49	-213.0	-36.4	65.4	56.2	9.25	7.077		
1,700.0	1,674.5	1,694.1	1,677.0	5.5	4.9	116.76	-229.8	-39.0	71.7	61.9	9.88	7.263		
1,800.0	1,772.1	1,793.8	1,775.3	5.9	5.2	118.67	-246.6	-41.7	78.1	67.6	10.50	7.441		
1,900.0	1,869.8	1,893.6	1,873.6	6.3	5.5	120.28	-263.4	-44.4	84.6	73.5	11.12	7.608		
2,000.0	1,967.4	1,993.4	1,971.9	6.7	5.9	121.67	-280.2	-47.0	91.1	79.4	11.73	7.765		
2,100.0	2,065.1	2,093.1	2,070.2	7.2	6.2	122.87	-297.0	-49.7	97.7	85.3	12.35	7.912		

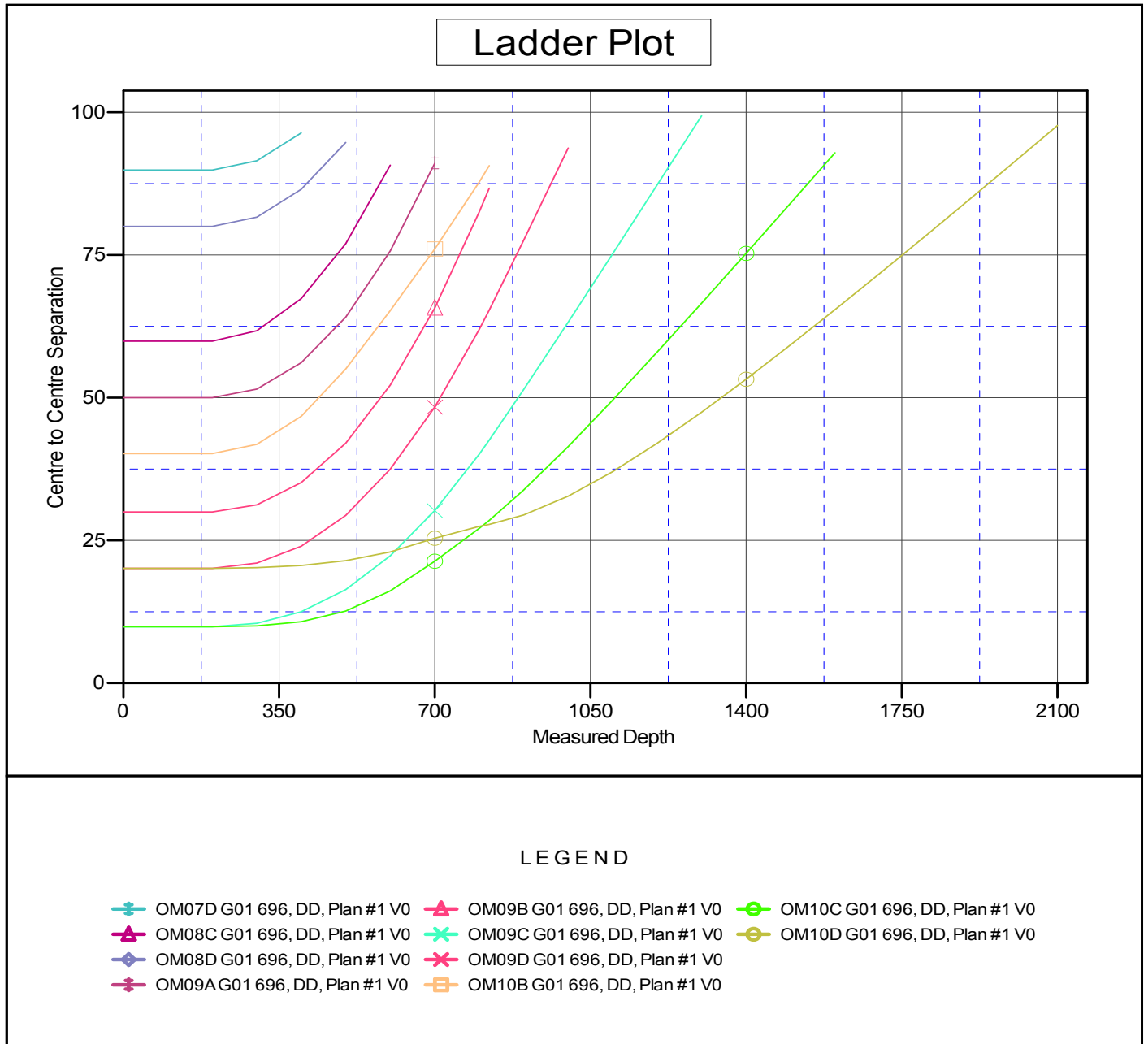
Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OM10A G01 696
Project:	Garfield County	TVD Reference:	KBE @ 8352.0ft (Patterson 302)
Reference Site:	G01 696 Pad	MD Reference:	KBE @ 8352.0ft (Patterson 302)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OM10A G01 696	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 8352.0ft (Patterson 302)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: OM10A G01 696
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.61°



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