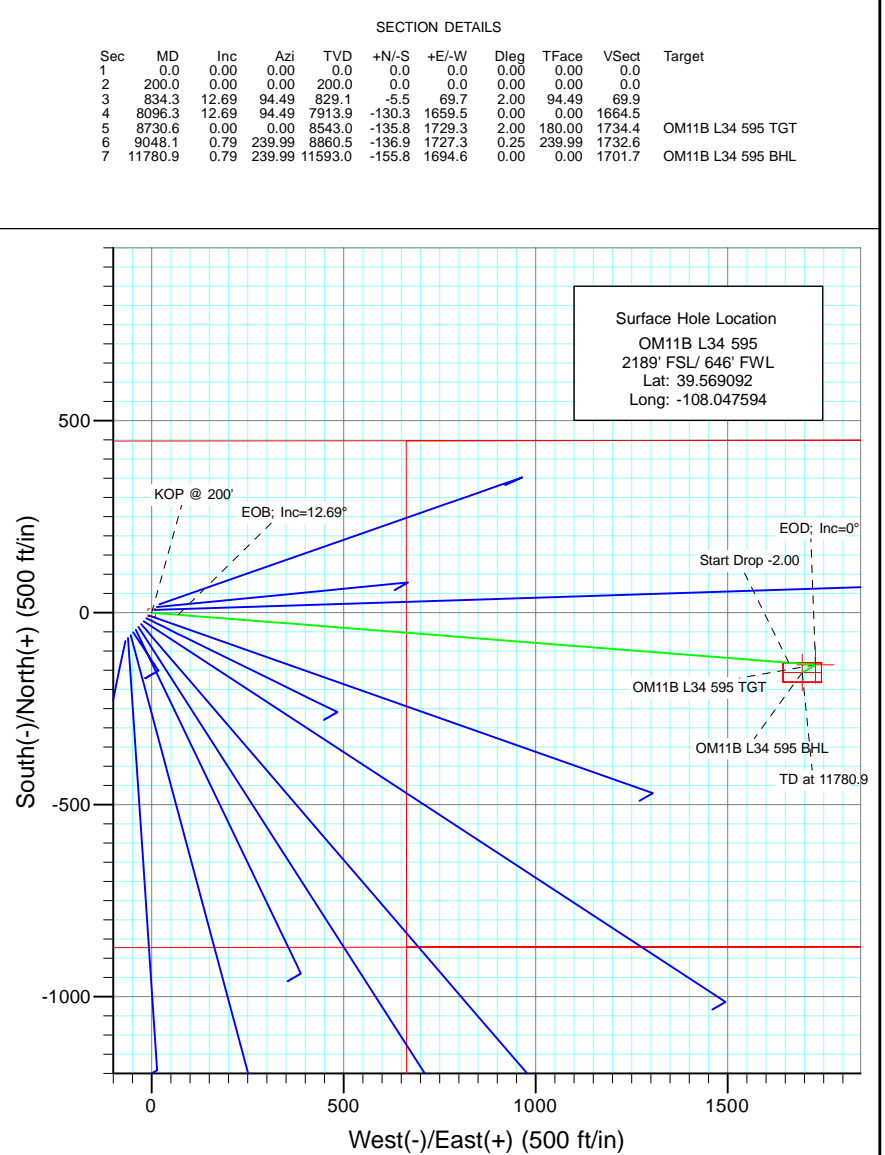
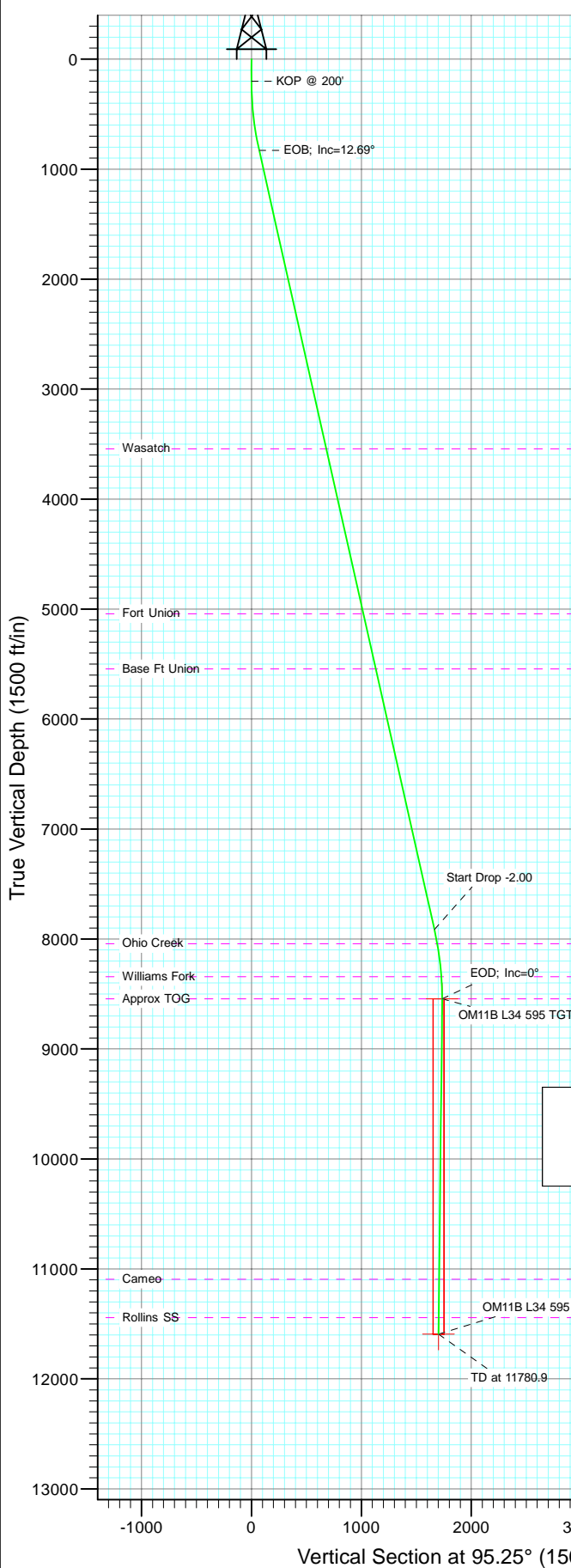
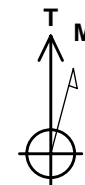




Project: Garfield County  
Site: L34 595 Pad  
Well: OM11B L34 595  
Wellbore: DD  
Design: Plan #1



Bottom Hole Location  
OM11B L34 595  
2031' FSL/ 2341' FWL  
Lat : 39.568664  
Long. : -108.041583



Azimuths to True North  
Magnetic North: 10.46°  
Magnetic Field  
Strength: 52377.3snT  
Dip Angle: 65.82°  
Date: 8/23/2010  
Model: IGRF200510

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3543.0	3616.1	Wasatch
5043.0	5153.6	Fort Union
5543.0	5666.1	Base Ft Union
8043.0	8228.0	Ohio Creek
8343.0	8530.4	Williams Fork
8543.0	8730.6	Approx TOG
11093.0	11280.8	Cameo
11443.0	11630.9	Rollins SS

#### DESIGN DETAILS: Plan #1

105XXX; BH  
KBE @ 8240.0ft (Patterson 302)

Target	Azimuth	Origin	N/S	E/W	From TVD
OM11B L34 595 BHL	95.25	Slot	0.0	0.0	0.0

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site:</b>	L34 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

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

Site		L34 595 Pad			
Site Position:		Northing:	1,642,264.05 ft	Latitude:	39.569152
From:	Lat/Long	Easting:	2,281,933.96 ft	Longitude:	-108.047522
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.61 °

Well	OM11B L34 595					
Well Position	+N/-S	0.0 ft	Northing:	1,642,242.76 ft	Latitude:	39.569092
	+E/-W	0.0 ft	Easting:	2,281,913.06 ft	Longitude:	-108.047594
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,225.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	8/23/2010	10.46	65.82	52,377

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	95.25

<b>Plan Sections</b>										
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	
834.3	12.69	94.49	829.1	-5.5	69.7	2.00	2.00	0.00	94.49	
8,096.3	12.69	94.49	7,913.9	-130.3	1,659.5	0.00	0.00	0.00	0.00	
8,730.6	0.00	0.00	8,543.0	-135.8	1,729.3	2.00	-2.00	0.00	180.00	OM11B L34 595 TGT
9,048.1	0.79	239.99	8,860.5	-136.9	1,727.3	0.25	0.25	-37.79	239.99	
11,780.9	0.79	239.99	11,593.0	-155.8	1,694.6	0.00	0.00	0.00	0.00	OM11B L34 595 BHL

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site:</b>	L34 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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	94.49	210.0	0.0	0.0	0.0	2.00	2.00	
240.0	0.80	94.49	240.0	0.0	0.3	0.3	2.00	2.00	
270.0	1.40	94.49	270.0	-0.1	0.9	0.9	2.00	2.00	
300.0	2.00	94.49	300.0	-0.1	1.7	1.7	2.00	2.00	
330.0	2.60	94.49	330.0	-0.2	2.9	2.9	2.00	2.00	
360.0	3.20	94.49	359.9	-0.3	4.5	4.5	2.00	2.00	
390.0	3.80	94.49	389.9	-0.5	6.3	6.3	2.00	2.00	
420.0	4.40	94.49	419.8	-0.7	8.4	8.4	2.00	2.00	
450.0	5.00	94.49	449.7	-0.9	10.9	10.9	2.00	2.00	
480.0	5.60	94.49	479.6	-1.1	13.6	13.7	2.00	2.00	
510.0	6.20	94.49	509.4	-1.3	16.7	16.8	2.00	2.00	
540.0	6.80	94.49	539.2	-1.6	20.1	20.2	2.00	2.00	
570.0	7.40	94.49	569.0	-1.9	23.8	23.9	2.00	2.00	
600.0	8.00	94.49	598.7	-2.2	27.8	27.9	2.00	2.00	
630.0	8.60	94.49	628.4	-2.5	32.1	32.2	2.00	2.00	
660.0	9.20	94.49	658.0	-2.9	36.7	36.8	2.00	2.00	
690.0	9.80	94.49	687.6	-3.3	41.7	41.8	2.00	2.00	
720.0	10.40	94.49	717.1	-3.7	46.9	47.1	2.00	2.00	
750.0	11.00	94.49	746.6	-4.1	52.5	52.6	2.00	2.00	
780.0	11.60	94.49	776.0	-4.6	58.3	58.5	2.00	2.00	
810.0	12.20	94.49	805.4	-5.1	64.5	64.7	2.00	2.00	
834.3	12.69	94.49	829.1	-5.5	69.7	69.9	2.00	2.00	EOB; Inc=12.69°
840.0	12.69	94.49	834.7	-5.6	71.0	71.2	0.00	0.00	
870.0	12.69	94.49	864.0	-6.1	77.5	77.8	0.00	0.00	
900.0	12.69	94.49	893.2	-6.6	84.1	84.4	0.00	0.00	
930.0	12.69	94.49	922.5	-7.1	90.7	90.9	0.00	0.00	
960.0	12.69	94.49	951.8	-7.6	97.2	97.5	0.00	0.00	
990.0	12.69	94.49	981.0	-8.2	103.8	104.1	0.00	0.00	
1,020.0	12.69	94.49	1,010.3	-8.7	110.4	110.7	0.00	0.00	
1,050.0	12.69	94.49	1,039.6	-9.2	116.9	117.3	0.00	0.00	
1,080.0	12.69	94.49	1,068.8	-9.7	123.5	123.9	0.00	0.00	
1,110.0	12.69	94.49	1,098.1	-10.2	130.1	130.5	0.00	0.00	
1,140.0	12.69	94.49	1,127.4	-10.7	136.6	137.1	0.00	0.00	
1,170.0	12.69	94.49	1,156.6	-11.2	143.2	143.6	0.00	0.00	
1,200.0	12.69	94.49	1,185.9	-11.8	149.8	150.2	0.00	0.00	
1,230.0	12.69	94.49	1,215.2	-12.3	156.3	156.8	0.00	0.00	
1,260.0	12.69	94.49	1,244.4	-12.8	162.9	163.4	0.00	0.00	
1,290.0	12.69	94.49	1,273.7	-13.3	169.5	170.0	0.00	0.00	
1,320.0	12.69	94.49	1,303.0	-13.8	176.1	176.6	0.00	0.00	
1,350.0	12.69	94.49	1,332.2	-14.3	182.6	183.2	0.00	0.00	
1,380.0	12.69	94.49	1,361.5	-14.9	189.2	189.8	0.00	0.00	
1,410.0	12.69	94.49	1,390.8	-15.4	195.8	196.3	0.00	0.00	
1,440.0	12.69	94.49	1,420.0	-15.9	202.3	202.9	0.00	0.00	
1,470.0	12.69	94.49	1,449.3	-16.4	208.9	209.5	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site:</b>	L34 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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	12.69	94.49	1,478.6	-16.9	215.5	216.1	0.00	0.00	
1,530.0	12.69	94.49	1,507.8	-17.4	222.0	222.7	0.00	0.00	
1,560.0	12.69	94.49	1,537.1	-18.0	228.6	229.3	0.00	0.00	
1,590.0	12.69	94.49	1,566.4	-18.5	235.2	235.9	0.00	0.00	
1,620.0	12.69	94.49	1,595.7	-19.0	241.7	242.4	0.00	0.00	
1,650.0	12.69	94.49	1,624.9	-19.5	248.3	249.0	0.00	0.00	
1,680.0	12.69	94.49	1,654.2	-20.0	254.9	255.6	0.00	0.00	
1,710.0	12.69	94.49	1,683.5	-20.5	261.4	262.2	0.00	0.00	
1,740.0	12.69	94.49	1,712.7	-21.0	268.0	268.8	0.00	0.00	
1,770.0	12.69	94.49	1,742.0	-21.6	274.6	275.4	0.00	0.00	
1,800.0	12.69	94.49	1,771.3	-22.1	281.1	282.0	0.00	0.00	
1,830.0	12.69	94.49	1,800.5	-22.6	287.7	288.6	0.00	0.00	
1,860.0	12.69	94.49	1,829.8	-23.1	294.3	295.1	0.00	0.00	
1,890.0	12.69	94.49	1,859.1	-23.6	300.8	301.7	0.00	0.00	
1,920.0	12.69	94.49	1,888.3	-24.1	307.4	308.3	0.00	0.00	
1,950.0	12.69	94.49	1,917.6	-24.7	314.0	314.9	0.00	0.00	
1,980.0	12.69	94.49	1,946.9	-25.2	320.5	321.5	0.00	0.00	
2,010.0	12.69	94.49	1,976.1	-25.7	327.1	328.1	0.00	0.00	
2,040.0	12.69	94.49	2,005.4	-26.2	333.7	334.7	0.00	0.00	
2,070.0	12.69	94.49	2,034.7	-26.7	340.2	341.3	0.00	0.00	
2,100.0	12.69	94.49	2,063.9	-27.2	346.8	347.8	0.00	0.00	
2,130.0	12.69	94.49	2,093.2	-27.8	353.4	354.4	0.00	0.00	
2,160.0	12.69	94.49	2,122.5	-28.3	359.9	361.0	0.00	0.00	
2,190.0	12.69	94.49	2,151.7	-28.8	366.5	367.6	0.00	0.00	
2,220.0	12.69	94.49	2,181.0	-29.3	373.1	374.2	0.00	0.00	
2,250.0	12.69	94.49	2,210.3	-29.8	379.6	380.8	0.00	0.00	
2,280.0	12.69	94.49	2,239.5	-30.3	386.2	387.4	0.00	0.00	
2,310.0	12.69	94.49	2,268.8	-30.8	392.8	394.0	0.00	0.00	
2,340.0	12.69	94.49	2,298.1	-31.4	399.4	400.5	0.00	0.00	
2,370.0	12.69	94.49	2,327.3	-31.9	405.9	407.1	0.00	0.00	
2,400.0	12.69	94.49	2,356.6	-32.4	412.5	413.7	0.00	0.00	
2,430.0	12.69	94.49	2,385.9	-32.9	419.1	420.3	0.00	0.00	
2,460.0	12.69	94.49	2,415.1	-33.4	425.6	426.9	0.00	0.00	
2,490.0	12.69	94.49	2,444.4	-33.9	432.2	433.5	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									
OM11B L34 595 TGT	0.00	0.00	8,543.0	-135.8	1,729.3	1,642,058.53	2,283,637.82	39.568719	-108.041460
- plan misses target center by 6235.8ft at 2490.0ft MD (2444.4 TVD, -33.9 N, 432.2 E)									
- Point									
OM11B L34 595 BHL	0.00	0.00	11,593.0	-155.8	1,694.6	1,642,039.48	2,283,602.58	39.568664	-108.041583
- plan misses target center by 9236.1ft at 2490.0ft MD (2444.4 TVD, -33.9 N, 432.2 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site:</b>	L34 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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	12.69	94.49	2,454.2	-34.1	434.4	435.7	0.00	0.00	
2,600.0	12.69	94.49	2,551.7	-35.8	456.3	457.6	0.00	0.00	
2,700.0	12.69	94.49	2,649.3	-37.6	478.2	479.6	0.00	0.00	
2,800.0	12.69	94.49	2,746.8	-39.3	500.1	501.5	0.00	0.00	
2,900.0	12.69	94.49	2,844.4	-41.0	521.9	523.5	0.00	0.00	
3,000.0	12.69	94.49	2,942.0	-42.7	543.8	545.5	0.00	0.00	
3,100.0	12.69	94.49	3,039.5	-44.4	565.7	567.4	0.00	0.00	
3,200.0	12.69	94.49	3,137.1	-46.1	587.6	589.4	0.00	0.00	
3,300.0	12.69	94.49	3,234.6	-47.9	609.5	611.3	0.00	0.00	
3,400.0	12.69	94.49	3,332.2	-49.6	631.4	633.3	0.00	0.00	
3,500.0	12.69	94.49	3,429.8	-51.3	653.3	655.3	0.00	0.00	
3,600.0	12.69	94.49	3,527.3	-53.0	675.2	677.2	0.00	0.00	
3,616.1	12.69	94.49	3,543.0	-53.3	678.7	680.7	0.00	0.00	Wasatch
3,700.0	12.69	94.49	3,624.9	-54.7	697.1	699.2	0.00	0.00	
3,800.0	12.69	94.49	3,722.4	-56.5	719.0	721.1	0.00	0.00	
3,900.0	12.69	94.49	3,820.0	-58.2	740.9	743.1	0.00	0.00	
4,000.0	12.69	94.49	3,917.6	-59.9	762.8	765.0	0.00	0.00	
4,100.0	12.69	94.49	4,015.1	-61.6	784.7	787.0	0.00	0.00	
4,200.0	12.69	94.49	4,112.7	-63.3	806.5	809.0	0.00	0.00	
4,300.0	12.69	94.49	4,210.2	-65.1	828.4	830.9	0.00	0.00	
4,400.0	12.69	94.49	4,307.8	-66.8	850.3	852.9	0.00	0.00	
4,500.0	12.69	94.49	4,405.4	-68.5	872.2	874.8	0.00	0.00	
4,600.0	12.69	94.49	4,502.9	-70.2	894.1	896.8	0.00	0.00	
4,700.0	12.69	94.49	4,600.5	-71.9	916.0	918.7	0.00	0.00	
4,800.0	12.69	94.49	4,698.0	-73.7	937.9	940.7	0.00	0.00	
4,900.0	12.69	94.49	4,795.6	-75.4	959.8	962.7	0.00	0.00	
5,000.0	12.69	94.49	4,893.1	-77.1	981.7	984.6	0.00	0.00	
5,100.0	12.69	94.49	4,990.7	-78.8	1,003.6	1,006.6	0.00	0.00	
5,153.6	12.69	94.49	5,043.0	-79.7	1,015.3	1,018.3	0.00	0.00	Fort Union
5,200.0	12.69	94.49	5,088.3	-80.5	1,025.5	1,028.5	0.00	0.00	
5,300.0	12.69	94.49	5,185.8	-82.3	1,047.4	1,050.5	0.00	0.00	
5,400.0	12.69	94.49	5,283.4	-84.0	1,069.3	1,072.4	0.00	0.00	
5,500.0	12.69	94.49	5,380.9	-85.7	1,091.1	1,094.4	0.00	0.00	
5,600.0	12.69	94.49	5,478.5	-87.4	1,113.0	1,116.4	0.00	0.00	
5,666.1	12.69	94.49	5,543.0	-88.5	1,127.5	1,130.9	0.00	0.00	Base Ft Union
5,700.0	12.69	94.49	5,576.1	-89.1	1,134.9	1,138.3	0.00	0.00	
5,800.0	12.69	94.49	5,673.6	-90.8	1,156.8	1,160.3	0.00	0.00	
5,900.0	12.69	94.49	5,771.2	-92.6	1,178.7	1,182.2	0.00	0.00	
6,000.0	12.69	94.49	5,868.7	-94.3	1,200.6	1,204.2	0.00	0.00	
6,100.0	12.69	94.49	5,966.3	-96.0	1,222.5	1,226.2	0.00	0.00	
6,200.0	12.69	94.49	6,063.9	-97.7	1,244.4	1,248.1	0.00	0.00	
6,300.0	12.69	94.49	6,161.4	-99.4	1,266.3	1,270.1	0.00	0.00	
6,400.0	12.69	94.49	6,259.0	-101.2	1,288.2	1,292.0	0.00	0.00	
6,500.0	12.69	94.49	6,356.5	-102.9	1,310.1	1,314.0	0.00	0.00	
6,600.0	12.69	94.49	6,454.1	-104.6	1,332.0	1,335.9	0.00	0.00	
6,700.0	12.69	94.49	6,551.7	-106.3	1,353.8	1,357.9	0.00	0.00	
6,800.0	12.69	94.49	6,649.2	-108.0	1,375.7	1,379.9	0.00	0.00	
6,900.0	12.69	94.49	6,746.8	-109.8	1,397.6	1,401.8	0.00	0.00	
7,000.0	12.69	94.49	6,844.3	-111.5	1,419.5	1,423.8	0.00	0.00	
7,100.0	12.69	94.49	6,941.9	-113.2	1,441.4	1,445.7	0.00	0.00	
7,200.0	12.69	94.49	7,039.4	-114.9	1,463.3	1,467.7	0.00	0.00	
7,300.0	12.69	94.49	7,137.0	-116.6	1,485.2	1,489.6	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site:</b>	L34 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,400.0	12.69	94.49	7,234.6	-118.4	1,507.1	1,511.6	0.00	0.00	
7,500.0	12.69	94.49	7,332.1	-120.1	1,529.0	1,533.6	0.00	0.00	
7,600.0	12.69	94.49	7,429.7	-121.8	1,550.9	1,555.5	0.00	0.00	
7,700.0	12.69	94.49	7,527.2	-123.5	1,572.8	1,577.5	0.00	0.00	
7,800.0	12.69	94.49	7,624.8	-125.2	1,594.7	1,599.4	0.00	0.00	
7,900.0	12.69	94.49	7,722.4	-127.0	1,616.6	1,621.4	0.00	0.00	
8,000.0	12.69	94.49	7,819.9	-128.7	1,638.4	1,643.3	0.00	0.00	
8,096.3	12.69	94.49	7,913.9	-130.3	1,659.5	1,664.5	0.00	0.00	Start Drop -2.00
8,100.0	12.61	94.49	7,917.5	-130.4	1,660.3	1,665.3	2.00	-2.00	
8,200.0	10.61	94.49	8,015.4	-132.0	1,680.4	1,685.4	2.00	-2.00	
8,228.0	10.05	94.49	8,043.0	-132.4	1,685.4	1,690.5	2.00	-2.00	Ohio Creek
8,300.0	8.61	94.49	8,114.0	-133.3	1,697.0	1,702.1	2.00	-2.00	
8,400.0	6.61	94.49	8,213.1	-134.3	1,710.3	1,715.4	2.00	-2.00	
8,500.0	4.61	94.49	8,312.7	-135.1	1,720.0	1,725.1	2.00	-2.00	
8,530.4	4.00	94.49	8,343.0	-135.3	1,722.3	1,727.4	2.00	-2.00	Williams Fork
8,600.0	2.61	94.49	8,412.4	-135.6	1,726.3	1,731.4	2.00	-2.00	
8,700.0	0.61	94.49	8,512.4	-135.8	1,729.1	1,734.3	2.00	-2.00	
8,730.6	0.00	0.00	8,543.0	-135.8	1,729.3	1,734.4	2.00	-2.00	EOD; Inc=0° - Approx TOG - OM11B L34 595 T
8,800.0	0.17	239.99	8,612.4	-135.9	1,729.2	1,734.3	0.25	0.25	
8,900.0	0.42	239.99	8,712.4	-136.1	1,728.7	1,733.9	0.25	0.25	
9,000.0	0.67	239.99	8,812.4	-136.6	1,727.9	1,733.1	0.25	0.25	
9,048.1	0.79	239.99	8,860.5	-136.9	1,727.3	1,732.6	0.25	0.25	
9,100.0	0.79	239.99	8,912.4	-137.3	1,726.7	1,732.0	0.00	0.00	
9,200.0	0.79	239.99	9,012.4	-138.0	1,725.5	1,730.9	0.00	0.00	
9,300.0	0.79	239.99	9,112.4	-138.6	1,724.3	1,729.8	0.00	0.00	
9,400.0	0.79	239.99	9,212.4	-139.3	1,723.1	1,728.6	0.00	0.00	
9,500.0	0.79	239.99	9,312.3	-140.0	1,721.9	1,727.5	0.00	0.00	
9,600.0	0.79	239.99	9,412.3	-140.7	1,720.7	1,726.4	0.00	0.00	
9,700.0	0.79	239.99	9,512.3	-141.4	1,719.5	1,725.2	0.00	0.00	
9,800.0	0.79	239.99	9,612.3	-142.1	1,718.3	1,724.1	0.00	0.00	
9,900.0	0.79	239.99	9,712.3	-142.8	1,717.1	1,723.0	0.00	0.00	
10,000.0	0.79	239.99	9,812.3	-143.5	1,715.9	1,721.9	0.00	0.00	
10,100.0	0.79	239.99	9,912.3	-144.2	1,714.7	1,720.7	0.00	0.00	
10,200.0	0.79	239.99	10,012.3	-144.9	1,713.5	1,719.6	0.00	0.00	
10,300.0	0.79	239.99	10,112.3	-145.6	1,712.3	1,718.5	0.00	0.00	
10,400.0	0.79	239.99	10,212.3	-146.3	1,711.1	1,717.3	0.00	0.00	
10,500.0	0.79	239.99	10,312.3	-147.0	1,709.9	1,716.2	0.00	0.00	
10,600.0	0.79	239.99	10,412.2	-147.7	1,708.7	1,715.1	0.00	0.00	
10,700.0	0.79	239.99	10,512.2	-148.3	1,707.5	1,713.9	0.00	0.00	
10,800.0	0.79	239.99	10,612.2	-149.0	1,706.3	1,712.8	0.00	0.00	
10,900.0	0.79	239.99	10,712.2	-149.7	1,705.1	1,711.7	0.00	0.00	
11,000.0	0.79	239.99	10,812.2	-150.4	1,703.9	1,710.5	0.00	0.00	
11,100.0	0.79	239.99	10,912.2	-151.1	1,702.7	1,709.4	0.00	0.00	
11,200.0	0.79	239.99	11,012.2	-151.8	1,701.5	1,708.3	0.00	0.00	
11,280.8	0.79	239.99	11,093.0	-152.4	1,700.6	1,707.4	0.00	0.00	Cameo
11,300.0	0.79	239.99	11,112.2	-152.5	1,700.3	1,707.1	0.00	0.00	
11,400.0	0.79	239.99	11,212.2	-153.2	1,699.1	1,706.0	0.00	0.00	
11,500.0	0.79	239.99	11,312.2	-153.9	1,697.9	1,704.9	0.00	0.00	
11,600.0	0.79	239.99	11,412.1	-154.6	1,696.7	1,703.8	0.00	0.00	
11,630.9	0.79	239.99	11,443.0	-154.8	1,696.4	1,703.4	0.00	0.00	Rollins SS
11,700.0	0.79	239.99	11,512.1	-155.3	1,695.5	1,702.6	0.00	0.00	
11,780.9	0.79	239.99	11,593.0	-155.8	1,694.6	1,701.7	0.00	0.00	OM11B L34 595 BHL

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site:</b>	L34 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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)		
OM11B L34 595 TGT	0.00	0.00	8,543.0	-135.8	1,729.3	1,642,058.53	2,283,637.82	39.568719	-108.041460
- plan hits target center									
- Point									
OM11B L34 595 BHL	0.00	0.00	11,593.0	-155.8	1,694.6	1,642,039.48	2,283,602.58	39.568664	-108.041583
- plan hits target center									
- Rectangle (sides W50.0 H100.0 D0.0)									

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
3,616.1	3,543.0	Wasatch		0.00	
5,153.6	5,043.0	Fort Union		0.00	
5,666.1	5,543.0	Base Ft Union		0.00	
8,228.0	8,043.0	Ohio Creek		0.00	
8,530.4	8,343.0	Williams Fork		0.00	
8,730.6	8,543.0	Approx TOG		0.00	
11,280.8	11,093.0	Cameo		0.00	
11,630.9	11,443.0	Rollins SS		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
834.3	829.1	-5.5	69.7	EOB; Inc=12.69°
8,096.3	7,913.9	-130.3	1,659.5	Start Drop -2.00
8,730.6	8,543.0	-135.8	1,729.3	EOD; Inc=0°
11,780.9	11,593.0	-136.9	1,727.3	TD at 11780.9

# **Berry Petroleum Company (NAD 83)**

**Garfield County**

**L34 595 Pad**

**OM11B L34 595**

**DD**

**Plan #1**

## **Anticollision Report**

**27 August, 2010**



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	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	8/27/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,780.9	Plan #1 (DD)	MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
L34 595 Pad						
OM10B L34 595 - DD - Plan #1	200.0	200.0	9.9	9.3	15.396	CC
OM10B L34 595 - DD - Plan #1	300.0	299.8	10.1	9.1	10.098	ES
OM10B L34 595 - DD - Plan #1	900.0	898.2	18.2	13.8	4.155	SF
OM11A L34 595 - DD - Plan #1	200.0	200.0	29.8	29.2	46.187	CC, ES
OM11A L34 595 - DD - Plan #1	1,400.0	1,391.1	98.0	89.6	11.695	SF
OM11C L34 595 - DD - Plan #1	200.0	200.0	9.9	9.3	15.396	CC, ES
OM11C L34 595 - DD - Plan #1	700.0	700.4	20.5	17.5	6.892	SF
OM12A L34 595 - DD - Plan #1	466.1	465.7	15.6	13.9	9.545	CC, ES
OM12A L34 595 - DD - Plan #1	500.0	499.5	15.9	14.2	9.031	SF
OM12B L34 595 - DD - Plan #1	200.0	200.0	70.1	69.4	108.481	CC, ES
OM12B L34 595 - DD - Plan #1	600.0	598.7	90.1	87.9	42.866	SF
OM12C L34 595 - DD - Plan #1	200.0	200.0	60.1	59.5	93.095	CC, ES
OM12C L34 595 - DD - Plan #1	700.0	697.1	93.8	91.3	37.557	SF
OM12D L34 595 - DD - Plan #1						Out of range
OM13A L34 595 - DD - Plan #1	200.0	200.0	19.9	19.2	30.787	CC, ES
OM13A L34 595 - DD - Plan #1	400.0	399.8	24.8	23.5	18.358	SF
OM13B L34 595 - DD - Plan #1	200.0	200.0	89.9	89.3	139.273	CC, ES
OM13B L34 595 - DD - Plan #1	400.0	399.8	94.4	93.1	69.605	SF
OM13D L34 595 - DD - Plan #1	200.0	200.0	50.2	49.5	77.689	CC, ES
OM13D L34 595 - DD - Plan #1	700.0	694.9	88.3	85.4	30.757	SF
OM14A L34 595 - DD - Plan #1	200.0	200.0	30.1	29.5	46.607	CC, ES
OM14A L34 595 - DD - Plan #1	1,100.0	1,097.5	92.3	86.2	15.148	SF
OM14B L34 595 - DD - Plan #1	200.0	200.0	40.0	39.4	61.998	CC, ES
OM14B L34 595 - DD - Plan #1	900.0	896.1	99.5	95.5	25.010	SF
OM14C L34 595 - DD - Plan #1	200.0	200.0	80.0	79.4	123.877	CC, ES
OM14C L34 595 - DD - Plan #1	500.0	494.6	97.9	96.2	54.984	SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design L34 595 Pad - OM10B L34 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	42.88	7.3	6.8	9.9					
100.0	100.0	100.0	100.0	0.1	0.1	42.88	7.3	6.8	9.9	9.6	0.30	33.508		
200.0	200.0	200.0	200.0	0.3	0.3	42.88	7.3	6.8	9.9	9.3	0.65	15.396 CC		
300.0	300.0	299.8	299.7	0.5	0.5	-52.34	7.3	8.5	10.1	9.1	1.00	10.098 ES		
400.0	399.8	399.5	399.3	0.7	0.7	-54.44	7.5	13.7	10.5	9.1	1.37	7.664		
500.0	499.5	499.3	498.7	0.9	0.9	-57.55	7.8	22.4	11.3	9.5	1.79	6.288		
600.0	598.7	599.0	597.7	1.2	1.2	-61.26	8.2	34.5	12.4	10.1	2.29	5.409		
700.0	697.5	698.7	696.2	1.5	1.5	-65.13	8.7	50.0	13.8	11.0	2.88	4.801		
800.0	795.6	798.5	794.1	1.9	1.9	-68.84	9.3	69.0	15.7	12.1	3.60	4.363		
834.3	829.1	832.6	827.5	2.0	2.0	-70.04	9.5	76.3	16.4	12.6	3.88	4.240		
900.0	893.2	898.2	891.3	2.3	2.3	-69.98	10.0	91.4	18.2	13.8	4.38	4.155 SF		
1,000.0	990.8	997.7	987.4	2.7	2.8	-63.29	10.8	117.1	22.3	17.3	5.05	4.425		
1,100.0	1,088.3	1,096.9	1,082.3	3.1	3.3	-53.31	11.7	145.9	28.9	23.4	5.50	5.256		
1,200.0	1,185.9	1,196.4	1,177.0	3.5	3.9	-45.44	12.7	176.5	37.3	31.5	5.84	6.383		
1,300.0	1,283.5	1,296.0	1,271.8	3.9	4.5	-40.51	13.7	207.1	46.1	39.9	6.21	7.431		
1,400.0	1,381.0	1,395.5	1,366.5	4.4	5.0	-37.18	14.7	237.6	55.2	48.6	6.59	8.371		
1,500.0	1,478.6	1,495.1	1,461.2	4.8	5.6	-34.80	15.6	268.2	64.4	57.4	6.99	9.207		
1,600.0	1,576.1	1,594.6	1,556.0	5.2	6.2	-33.01	16.6	298.8	73.6	66.2	7.40	9.949		
1,700.0	1,673.7	1,694.2	1,650.7	5.6	6.8	-31.62	17.6	329.4	83.0	75.2	7.82	10.609		
1,800.0	1,771.3	1,793.7	1,745.4	6.1	7.4	-30.51	18.6	359.9	92.3	84.1	8.25	11.199		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design L34 595 Pad - OM11A L34 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	42.88	21.9	20.3	29.8					
100.0	100.0	100.0	100.0	0.1	0.1	42.88	21.9	20.3	29.8	29.5	0.30	100.525		
200.0	200.0	200.0	200.0	0.3	0.3	42.88	21.9	20.3	29.8	29.2	0.65	46.187 CC, ES		
300.0	300.0	299.1	299.1	0.5	0.5	-52.65	22.4	21.9	30.3	29.3	1.00	30.388		
400.0	399.8	398.1	398.0	0.7	0.7	-55.59	24.1	26.8	31.7	30.3	1.36	23.231		
500.0	499.5	497.1	496.6	0.9	0.9	-59.93	26.9	34.8	34.2	32.4	1.77	19.303		
600.0	598.7	596.0	594.8	1.2	1.2	-64.98	30.9	46.1	38.0	35.7	2.25	16.882		
700.0	697.5	694.8	692.4	1.5	1.5	-70.09	35.9	60.5	43.2	40.4	2.83	15.270		
800.0	795.6	793.5	789.3	1.9	1.9	-74.82	42.1	78.1	49.9	46.4	3.53	14.164		
834.3	829.1	827.6	822.7	2.0	2.0	-76.51	44.4	84.7	52.5	48.7	3.79	13.855		
900.0	893.2	893.1	886.8	2.3	2.2	-79.80	48.8	97.4	57.4	53.1	4.30	13.331		
1,000.0	990.8	992.7	984.2	2.7	2.6	-83.84	55.6	116.7	65.1	60.0	5.11	12.750		
1,100.0	1,088.3	1,092.3	1,081.7	3.1	3.0	-87.00	62.3	136.0	73.1	67.2	5.92	12.348		
1,200.0	1,185.9	1,191.9	1,179.2	3.5	3.4	-89.54	69.1	155.3	81.3	74.6	6.74	12.062		
1,300.0	1,283.5	1,291.5	1,276.7	3.9	3.8	-91.61	75.8	174.6	89.6	82.0	7.56	11.852		
1,400.0	1,381.0	1,391.1	1,374.2	4.4	4.2	-93.33	82.6	193.9	98.0	89.6	8.38	11.695 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design L34 595 Pad - OM11C L34 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-137.12	-7.3	-6.8	9.9					
100.0	100.0	100.0	100.0	0.1	0.1	-137.12	-7.3	-6.8	9.9	9.6	0.30	33.508		
200.0	200.0	200.0	200.0	0.3	0.3	-137.12	-7.3	-6.8	9.9	9.3	0.65	15.396 CC, ES		
300.0	300.0	300.1	300.1	0.5	0.5	127.08	-7.9	-5.1	10.3	9.3	1.00	10.327		
400.0	399.8	400.3	400.1	0.7	0.7	123.68	-9.6	-0.2	11.5	10.1	1.38	8.338		
500.0	499.5	500.4	499.8	0.9	0.9	119.38	-12.5	8.1	13.6	11.8	1.82	7.461		
600.0	598.7	600.4	599.1	1.2	1.2	115.18	-16.6	19.6	16.6	14.2	2.35	7.065		
700.0	697.5	700.4	697.9	1.5	1.5	111.59	-21.8	34.4	20.5	17.5	2.97	6.892 SF		
800.0	795.6	800.3	796.1	1.9	1.9	110.07	-27.9	51.8	25.4	21.7	3.68	6.897		
834.3	829.1	834.5	829.7	2.0	2.0	111.03	-30.1	57.9	27.3	23.4	3.92	6.967		
900.0	893.2	900.2	894.1	2.3	2.2	113.27	-34.2	69.5	31.2	26.8	4.38	7.128		
1,000.0	990.8	1,000.0	992.1	2.7	2.6	115.76	-40.4	87.2	37.2	32.1	5.08	7.326		
1,100.0	1,088.3	1,099.8	1,090.2	3.1	2.9	117.56	-46.6	104.9	43.3	37.5	5.78	7.485		
1,200.0	1,185.9	1,199.6	1,188.2	3.5	3.3	118.92	-52.9	122.6	49.4	42.9	6.48	7.613		
1,300.0	1,283.5	1,299.4	1,286.2	3.9	3.7	119.98	-59.1	140.3	55.5	48.3	7.19	7.719		
1,400.0	1,381.0	1,399.2	1,384.3	4.4	4.0	120.83	-65.4	158.0	61.6	53.7	7.89	7.808		
1,500.0	1,478.6	1,499.0	1,482.3	4.8	4.4	121.53	-71.6	175.7	67.7	59.1	8.59	7.883		
1,600.0	1,576.1	1,598.8	1,580.3	5.2	4.8	122.10	-77.8	193.4	73.9	64.6	9.29	7.948		
1,700.0	1,673.7	1,698.6	1,678.3	5.6	5.2	122.60	-84.1	211.0	80.0	70.0	10.00	8.004		
1,800.0	1,771.3	1,798.4	1,776.4	6.1	5.5	123.02	-90.3	228.7	86.2	75.5	10.70	8.054		
1,900.0	1,868.8	1,898.2	1,874.4	6.5	5.9	123.38	-96.5	246.4	92.3	80.9	11.40	8.097		
2,000.0	1,966.4	1,998.1	1,972.4	6.9	6.3	123.70	-102.8	264.1	98.5	86.4	12.11	8.136		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> L34 595 Pad - OM12A L34 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	42.89	14.6	13.5	19.9					
100.0	100.0	100.0	100.0	0.1	0.1	42.89	14.6	13.5	19.9	19.6	0.30	67.006		
200.0	200.0	200.0	200.0	0.3	0.3	42.89	14.6	13.5	19.9	19.2	0.65	30.787		
300.0	300.0	300.0	300.0	0.5	0.5	-55.78	14.6	13.5	18.8	17.8	1.00	18.899		
400.0	399.8	399.8	399.8	0.7	0.7	-71.02	14.6	13.5	16.5	15.1	1.37	12.070		
466.1	465.7	465.7	465.7	0.8	0.8	-90.00	14.6	13.5	15.6	13.9	1.63	9.545 CC, ES		
500.0	499.5	499.5	499.5	0.9	0.8	-102.05	14.6	13.5	15.9	14.2	1.76	9.031 SF		
600.0	598.7	599.1	599.1	1.2	1.0	-130.91	14.7	15.2	21.1	18.9	2.14	9.857		
700.0	697.5	699.1	698.9	1.5	1.2	-145.30	15.2	20.4	29.6	27.1	2.50	11.873		
800.0	795.6	799.4	798.9	1.9	1.4	-152.22	16.1	29.1	39.5	36.7	2.86	13.793		
834.3	829.1	833.9	833.1	2.0	1.5	-153.69	16.5	32.9	43.1	40.1	3.00	14.375		
900.0	893.2	900.2	898.9	2.3	1.7	-155.39	17.3	41.3	49.3	46.1	3.26	15.145		
1,000.0	990.8	1,001.5	998.9	2.7	2.0	-155.67	18.8	57.1	56.5	52.8	3.70	15.279		
1,100.0	1,088.3	1,101.4	1,097.3	3.1	2.3	-154.91	20.5	74.5	62.2	58.0	4.17	14.907		
1,200.0	1,185.9	1,201.2	1,195.6	3.5	2.6	-154.29	22.2	91.9	67.8	63.2	4.65	14.573		
1,300.0	1,283.5	1,301.0	1,293.9	3.9	2.9	-153.75	24.0	109.3	73.5	68.3	5.15	14.274		
1,400.0	1,381.0	1,400.9	1,392.1	4.4	3.2	-153.30	25.7	126.7	79.1	73.5	5.65	14.010		
1,500.0	1,478.6	1,500.7	1,490.4	4.8	3.6	-152.90	27.4	144.1	84.8	78.6	6.16	13.775		
1,600.0	1,576.1	1,600.6	1,588.7	5.2	3.9	-152.56	29.1	161.5	90.5	83.8	6.67	13.566		
1,700.0	1,673.7	1,700.4	1,687.0	5.6	4.3	-152.25	30.8	178.9	96.1	89.0	7.19	13.379		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> L34 595 Pad - OM12B L34 595 - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	-137.15	-51.4	-47.6	70.1				
100.0	100.0	100.0	100.0	0.1	0.1	-137.15	-51.4	-47.6	70.1	69.8	0.30	236.105	
200.0	200.0	200.0	200.0	0.3	0.3	-137.15	-51.4	-47.6	70.1	69.4	0.65	108.481 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	129.44	-51.4	-47.6	71.2	70.2	1.00	71.373	
400.0	399.8	399.8	399.8	0.7	0.7	132.50	-51.4	-47.6	74.6	73.2	1.36	54.994	
500.0	499.5	499.5	499.5	0.9	0.8	136.97	-51.4	-47.6	80.7	79.0	1.73	46.784	
600.0	598.7	598.7	598.7	1.2	1.0	142.14	-51.4	-47.6	90.1	87.9	2.10	42.866 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													L34 595 Pad - OM12C L34 595 - DD - Plan #1		Offset Site Error:		0.0 ft
Survey Program: 0-MWD															Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	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	-137.16	-44.1	-40.9	60.1								
100.0	100.0	100.0	100.0	0.1	0.1	-137.16	-44.1	-40.9	60.1	59.8	0.30	202.619					
200.0	200.0	200.0	200.0	0.3	0.3	-137.16	-44.1	-40.9	60.1	59.5	0.65	93.095 CC, ES					
300.0	300.0	300.0	300.0	0.5	0.5	129.61	-44.1	-40.9	61.2	60.2	1.00	61.409					
400.0	399.8	399.8	399.8	0.7	0.7	133.13	-44.1	-40.9	64.7	63.3	1.36	47.701					
500.0	499.5	499.5	499.5	0.9	0.8	138.18	-44.1	-40.9	70.9	69.2	1.72	41.143					
600.0	598.7	598.4	598.4	1.2	1.0	142.64	-45.6	-40.1	80.6	78.5	2.10	38.389					
700.0	697.5	697.1	697.0	1.5	1.2	145.16	-50.2	-37.9	93.8	91.3	2.50	37.557 SF					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> L34 595 Pad - OM13A L34 595 - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	-137.11	-14.6	-13.5	19.9				
100.0	100.0	100.0	100.0	0.1	0.1	-137.11	-14.6	-13.5	19.9	19.6	0.30	67.006	
200.0	200.0	200.0	200.0	0.3	0.3	-137.11	-14.6	-13.5	19.9	19.2	0.65	30.787 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	132.12	-14.6	-13.5	21.0	20.0	1.00	21.079	
400.0	399.8	399.8	399.8	0.7	0.7	141.06	-14.6	-13.5	24.8	23.5	1.35	18.358 SF	
500.0	499.5	499.5	499.5	0.9	0.8	150.81	-14.6	-13.5	32.1	30.4	1.71	18.792	
600.0	598.7	598.7	598.7	1.2	1.0	158.64	-14.6	-13.5	43.1	41.1	2.06	20.987	
700.0	697.5	697.5	697.5	1.5	1.2	164.19	-14.6	-13.5	58.0	55.6	2.40	24.196	
800.0	795.6	795.6	795.6	1.9	1.4	168.00	-14.6	-13.5	76.6	73.8	2.73	28.012	
834.3	829.1	829.1	829.1	2.0	1.4	169.02	-14.6	-13.5	83.7	80.9	2.85	29.419	
900.0	893.2	893.2	893.2	2.3	1.5	170.62	-14.6	-13.5	98.0	94.9	3.07	31.900	



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> L34 595 Pad - OM13B L34 595 - DD - Plan #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	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	-137.14	-65.9	-61.2	89.9					
100.0	100.0	100.0	100.0	0.1	0.1	-137.14	-65.9	-61.2	89.9	89.6	0.30	303.122		
200.0	200.0	200.0	200.0	0.3	0.3	-137.14	-65.9	-61.2	89.9	89.3	0.65	139.273 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	129.21	-65.9	-61.2	91.0	90.0	1.00	91.315		
400.0	399.8	399.8	399.8	0.7	0.7	131.62	-65.9	-61.2	94.4	93.1	1.36	69.605 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> L34 595 Pad - OM13D L34 595 - DD - Plan #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	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	-137.16	-36.8	-34.1	50.2					
100.0	100.0	100.0	100.0	0.1	0.1	-137.16	-36.8	-34.1	50.2	49.9	0.30	169.088		
200.0	200.0	200.0	200.0	0.3	0.3	-137.16	-36.8	-34.1	50.2	49.5	0.65	77.689 CC, ES		
300.0	300.0	299.5	299.5	0.5	0.5	127.98	-38.2	-33.2	51.7	50.7	1.00	51.706		
400.0	399.8	398.9	398.8	0.7	0.7	126.98	-42.6	-30.4	56.3	54.9	1.38	40.779		
500.0	499.5	498.0	497.5	0.9	0.9	125.64	-49.8	-25.8	63.9	62.1	1.81	35.356		
600.0	598.7	596.7	595.5	1.2	1.2	124.19	-59.9	-19.3	74.6	72.3	2.30	32.427		
700.0	697.5	694.9	692.4	1.5	1.5	122.81	-72.7	-11.1	88.3	85.4	2.87	30.757 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design L34 595 Pad - OM14A L34 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-137.59	-22.2	-20.3	30.1					
100.0	100.0	100.0	100.0	0.1	0.1	-137.59	-22.2	-20.3	30.1	29.8	0.30	101.439		
200.0	200.0	200.0	200.0	0.3	0.3	-137.59	-22.2	-20.3	30.1	29.5	0.65	46.607	CC, ES	
300.0	300.0	300.2	300.1	0.5	0.5	127.26	-23.2	-18.8	30.9	29.9	1.00	30.861		
400.0	399.8	400.3	400.1	0.7	0.7	125.46	-26.1	-14.4	33.3	31.9	1.38	24.052		
500.0	499.5	500.3	499.8	0.9	0.9	122.99	-30.8	-7.1	37.4	35.5	1.82	20.508		
600.0	598.7	600.2	598.9	1.2	1.2	120.30	-37.5	3.1	43.1	40.8	2.34	18.457		
700.0	697.5	699.9	697.4	1.5	1.5	117.74	-46.0	16.1	50.6	47.7	2.95	17.179		
800.0	795.6	799.4	795.0	1.9	1.9	115.47	-56.4	32.0	59.9	56.2	3.66	16.338		
834.3	829.1	833.4	828.3	2.0	2.0	114.76	-60.4	38.1	63.4	59.5	3.93	16.132		
900.0	893.2	898.7	891.8	2.3	2.3	113.23	-68.6	50.5	70.5	66.0	4.46	15.822		
1,000.0	990.8	998.1	988.5	2.7	2.7	111.18	-81.1	69.7	81.4	76.1	5.27	15.440		
1,100.0	1,088.3	1,097.5	1,085.2	3.1	3.1	109.62	-93.7	88.9	92.3	86.2	6.10	15.148	SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design L34 595 Pad - OM14B L34 595 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	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	-137.47	-29.5	-27.1	40.0					
100.0	100.0	100.0	100.0	0.1	0.1	-137.47	-29.5	-27.1	40.0	39.7	0.30	134.936		
200.0	200.0	200.0	200.0	0.3	0.3	-137.47	-29.5	-27.1	40.0	39.4	0.65	61.998	CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	129.94	-29.5	-27.1	41.1	40.1	1.00	41.265		
400.0	399.8	399.8	399.8	0.7	0.7	132.80	-30.8	-25.9	44.7	43.3	1.36	32.899		
500.0	499.5	499.6	499.4	0.9	0.9	134.05	-34.8	-22.5	50.8	49.1	1.75	29.054		
600.0	598.7	599.2	598.6	1.2	1.1	133.99	-41.3	-16.9	59.4	57.2	2.19	27.139		
700.0	697.5	698.5	697.2	1.5	1.3	133.11	-50.5	-9.0	70.5	67.8	2.70	26.104		
800.0	795.6	797.5	795.0	1.9	1.6	131.80	-62.2	1.0	84.0	80.7	3.30	25.477		
834.3	829.1	831.3	828.3	2.0	1.8	131.29	-66.8	4.9	89.2	85.7	3.52	25.304		
900.0	893.2	896.1	891.8	2.3	2.0	130.13	-76.4	13.2	99.5	95.5	3.98	25.010	SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> L34 595 Pad - OM14C L34 595 - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	-137.15	-58.6	-54.4	80.0				
100.0	100.0	100.0	100.0	0.1	0.1	-137.15	-58.6	-54.4	80.0	79.7	0.30	269.614	
200.0	200.0	200.0	200.0	0.3	0.3	-137.15	-58.6	-54.4	80.0	79.4	0.65	123.877 CC, ES	
300.0	300.0	298.5	298.5	0.5	0.5	128.27	-60.3	-54.0	82.0	81.0	1.00	82.242	
400.0	399.8	396.8	396.6	0.7	0.7	128.02	-65.2	-52.7	88.0	86.6	1.37	64.235	
500.0	499.5	494.6	494.0	0.9	0.9	127.65	-73.3	-50.5	97.9	96.2	1.78	54.984 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OM11B L34 595
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Reference Site:</b>	L34 595 Pad	<b>MD Reference:</b>	KBE @ 8240.0ft (Patterson 302)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OM11B L34 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KBE @ 8240.0ft (Patterson 302)

Offset Depths are relative to Offset Datum

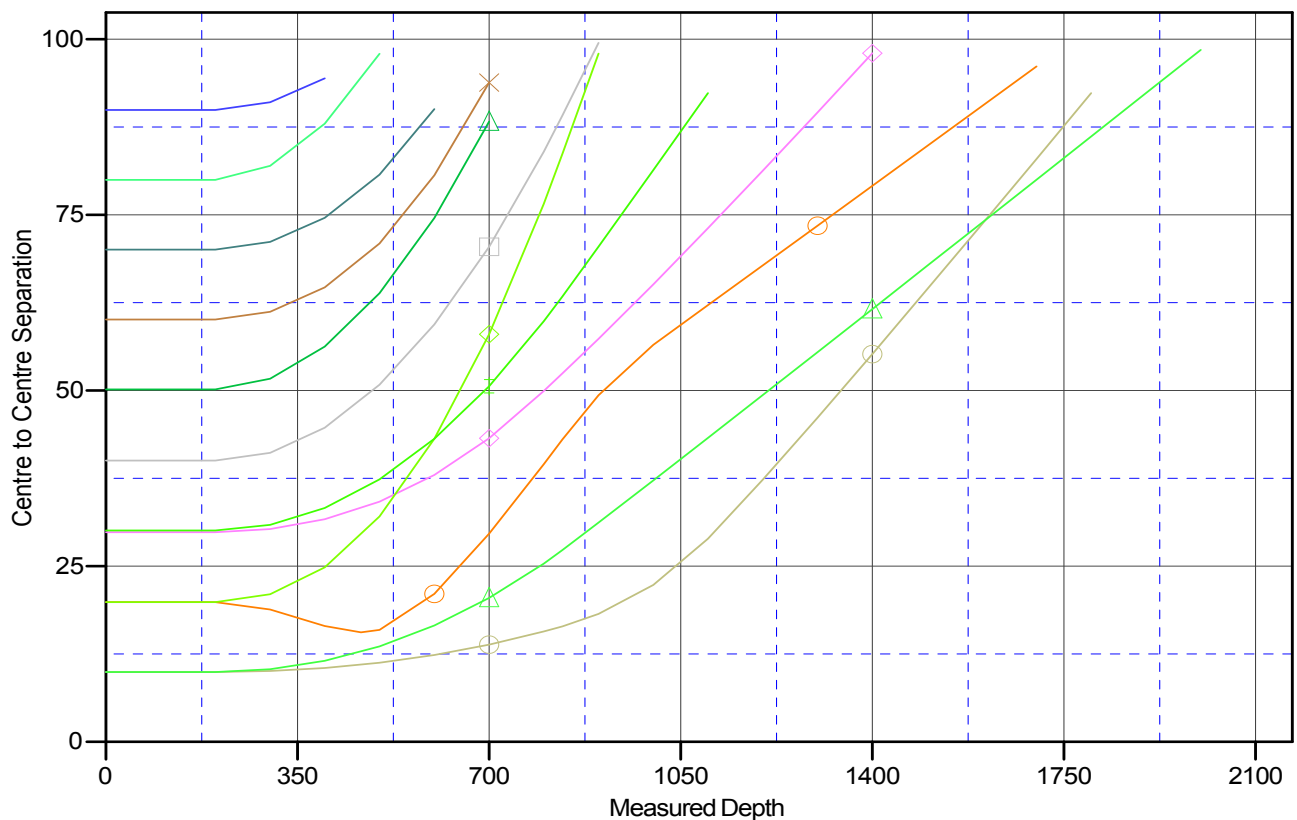
Central Meridian is -105.500000 °

Coordinates are relative to: OM11B L34 595

Coordinate System is US State Plane 1983, Colorado Central Zone

Grid Convergence at Surface is: -1.61°

### Ladder Plot



### LEGEND

OM10B L34 595, DD, Plan #1 V0	OM12B L34 595, DD, Plan #1 V0	OM13D L34 595, DD, Plan #1 V0
OM11A L34 595, DD, Plan #1 V0	OM12C L34 595, DD, Plan #1 V0	OM14A L34 595, DD, Plan #1 V0
OM11C L34 595, DD, Plan #1 V0	OM13A L34 595, DD, Plan #1 V0	OM14B L34 595, DD, Plan #1 V0
OM12A L34 595, DD, Plan #1 V0	OM13B L34 595, DD, Plan #1 V0	OM14C L34 595, DD, Plan #1 V0