



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site:</b>	Sec 6 T6S R96W (F06 696)	<b>North Reference:</b>	True
<b>Well:</b>	Chevron 6-33D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

<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		Sec 6 T6S R96W (F06 696)			
Site Position:		Northing:	1,638,592.01 ft	Latitude:	39.556729
From:	Lat/Long	Easting:	2,252,075.57 ft	Longitude:	-108.153012
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.67 °

Well	Chevron 6-33D					
Well Position	+N/-S	0.0 ft	Northing:	1,638,496.02 ft	Latitude:	39.556456
	+E/-W	0.0 ft	Easting:	2,251,955.70 ft	Longitude:	-108.153427
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,222.0 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	12/2/2009	10.60	65.81	52,427

<b>Design</b>	Plan #2			
<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	230.32

<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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
878.9	11.58	230.02	875.0	-37.5	-44.7	2.00	2.00	0.00	230.02	
6,757.6	11.58	230.02	6,634.0	-795.5	-948.8	0.00	0.00	0.00	0.00	
7,336.5	0.00	0.00	7,209.0	-833.0	-993.4	2.00	-2.00	0.00	180.00	Chevron 6-33D TOG
7,692.8	0.89	239.93	7,565.3	-834.4	-995.8	0.25	0.25	-33.70	239.93	
10,086.8	0.89	239.93	9,959.0	-853.0	-1,028.1	0.00	0.00	0.00	0.00	Chevron 6-33D BHL

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<b>Site:</b>	Sec 6 T6S R96W (F06 696)	<b>North Reference:</b>	True
<b>Well:</b>	Chevron 6-33D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
30.0	0.00	0.00	30.0	0.0	0.0	0.0	0.00	0.00	
60.0	0.00	0.00	60.0	0.0	0.0	0.0	0.00	0.00	
90.0	0.00	0.00	90.0	0.0	0.0	0.0	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	
210.0	0.00	0.00	210.0	0.0	0.0	0.0	0.00	0.00	
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	
270.0	0.00	0.00	270.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300' MD
330.0	0.60	230.02	330.0	-0.1	-0.1	0.2	2.00	2.00	
360.0	1.20	230.02	360.0	-0.4	-0.5	0.6	2.00	2.00	
390.0	1.80	230.02	390.0	-0.9	-1.1	1.4	2.00	2.00	
420.0	2.40	230.02	420.0	-1.6	-1.9	2.5	2.00	2.00	
450.0	3.00	230.02	449.9	-2.5	-3.0	3.9	2.00	2.00	
480.0	3.60	230.02	479.9	-3.6	-4.3	5.7	2.00	2.00	
510.0	4.20	230.02	509.8	-4.9	-5.9	7.7	2.00	2.00	
540.0	4.80	230.02	539.7	-6.5	-7.7	10.0	2.00	2.00	
570.0	5.40	230.02	569.6	-8.2	-9.7	12.7	2.00	2.00	
600.0	6.00	230.02	599.5	-10.1	-12.0	15.7	2.00	2.00	
630.0	6.60	230.02	629.3	-12.2	-14.5	19.0	2.00	2.00	
660.0	7.20	230.02	659.1	-14.5	-17.3	22.6	2.00	2.00	
690.0	7.80	230.02	688.8	-17.0	-20.3	26.5	2.00	2.00	
720.0	8.40	230.02	718.5	-19.7	-23.5	30.7	2.00	2.00	
750.0	9.00	230.02	748.2	-22.7	-27.0	35.3	2.00	2.00	
780.0	9.60	230.02	777.8	-25.8	-30.7	40.1	2.00	2.00	
810.0	10.20	230.02	807.3	-29.1	-34.7	45.3	2.00	2.00	
840.0	10.80	230.02	836.8	-32.6	-38.9	50.7	2.00	2.00	
870.0	11.40	230.02	866.2	-36.3	-43.3	56.5	2.00	2.00	
878.9	11.58	230.02	875.0	-37.5	-44.7	58.3	2.00	2.00	EOB; Inc=11.58°
900.0	11.58	230.02	895.6	-40.2	-47.9	62.5	0.00	0.00	
930.0	11.58	230.02	925.0	-44.0	-52.5	68.5	0.00	0.00	
960.0	11.58	230.02	954.4	-47.9	-57.1	74.6	0.00	0.00	
990.0	11.58	230.02	983.8	-51.8	-61.8	80.6	0.00	0.00	
1,020.0	11.58	230.02	1,013.2	-55.6	-66.4	86.6	0.00	0.00	
1,050.0	11.58	230.02	1,042.6	-59.5	-71.0	92.6	0.00	0.00	
1,080.0	11.58	230.02	1,072.0	-63.4	-75.6	98.7	0.00	0.00	
1,110.0	11.58	230.02	1,101.4	-67.3	-80.2	104.7	0.00	0.00	
1,140.0	11.58	230.02	1,130.8	-71.1	-84.8	110.7	0.00	0.00	
1,170.0	11.58	230.02	1,160.1	-75.0	-89.4	116.7	0.00	0.00	
1,200.0	11.58	230.02	1,189.5	-78.9	-94.1	122.7	0.00	0.00	
1,230.0	11.58	230.02	1,218.9	-82.7	-98.7	128.8	0.00	0.00	
1,260.0	11.58	230.02	1,248.3	-86.6	-103.3	134.8	0.00	0.00	
1,290.0	11.58	230.02	1,277.7	-90.5	-107.9	140.8	0.00	0.00	
1,320.0	11.58	230.02	1,307.1	-94.3	-112.5	146.8	0.00	0.00	
1,350.0	11.58	230.02	1,336.5	-98.2	-117.1	152.8	0.00	0.00	
1,380.0	11.58	230.02	1,365.9	-102.1	-121.7	158.9	0.00	0.00	
1,410.0	11.58	230.02	1,395.3	-105.9	-126.3	164.9	0.00	0.00	
1,440.0	11.58	230.02	1,424.7	-109.8	-131.0	170.9	0.00	0.00	
1,470.0	11.58	230.02	1,454.0	-113.7	-135.6	176.9	0.00	0.00	
1,500.0	11.58	230.02	1,483.4	-117.5	-140.2	182.9	0.00	0.00	

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<b>Site:</b>	Sec 6 T6S R96W (F06 696)	<b>North Reference:</b>	True
<b>Well:</b>	Chevron 6-33D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
1,530.0	11.58	230.02	1,512.8	-121.4	-144.8	189.0	0.00	0.00	
1,560.0	11.58	230.02	1,542.2	-125.3	-149.4	195.0	0.00	0.00	
1,590.0	11.58	230.02	1,571.6	-129.2	-154.0	201.0	0.00	0.00	
1,620.0	11.58	230.02	1,601.0	-133.0	-158.6	207.0	0.00	0.00	
1,650.0	11.58	230.02	1,630.4	-136.9	-163.3	213.1	0.00	0.00	
1,680.0	11.58	230.02	1,659.8	-140.8	-167.9	219.1	0.00	0.00	
1,710.0	11.58	230.02	1,689.2	-144.6	-172.5	225.1	0.00	0.00	
1,740.0	11.58	230.02	1,718.5	-148.5	-177.1	231.1	0.00	0.00	
1,770.0	11.58	230.02	1,747.9	-152.4	-181.7	237.1	0.00	0.00	
1,800.0	11.58	230.02	1,777.3	-156.2	-186.3	243.2	0.00	0.00	
1,830.0	11.58	230.02	1,806.7	-160.1	-190.9	249.2	0.00	0.00	
1,860.0	11.58	230.02	1,836.1	-164.0	-195.6	255.2	0.00	0.00	
1,890.0	11.58	230.02	1,865.5	-167.8	-200.2	261.2	0.00	0.00	
1,920.0	11.58	230.02	1,894.9	-171.7	-204.8	267.2	0.00	0.00	
1,950.0	11.58	230.02	1,924.3	-175.6	-209.4	273.3	0.00	0.00	
1,980.0	11.58	230.02	1,953.7	-179.4	-214.0	279.3	0.00	0.00	
2,010.0	11.58	230.02	1,983.1	-183.3	-218.6	285.3	0.00	0.00	
2,040.0	11.58	230.02	2,012.4	-187.2	-223.2	291.3	0.00	0.00	
2,070.0	11.58	230.02	2,041.8	-191.1	-227.9	297.3	0.00	0.00	
2,100.0	11.58	230.02	2,071.2	-194.9	-232.5	303.4	0.00	0.00	
2,130.0	11.58	230.02	2,100.6	-198.8	-237.1	309.4	0.00	0.00	
2,160.0	11.58	230.02	2,130.0	-202.7	-241.7	315.4	0.00	0.00	
2,190.0	11.58	230.02	2,159.4	-206.5	-246.3	321.4	0.00	0.00	
2,220.0	11.58	230.02	2,188.8	-210.4	-250.9	327.5	0.00	0.00	
2,250.0	11.58	230.02	2,218.2	-214.3	-255.5	333.5	0.00	0.00	
2,280.0	11.58	230.02	2,247.6	-218.1	-260.2	339.5	0.00	0.00	
2,310.0	11.58	230.02	2,276.9	-222.0	-264.8	345.5	0.00	0.00	
2,340.0	11.58	230.02	2,306.3	-225.9	-269.4	351.5	0.00	0.00	
2,370.0	11.58	230.02	2,335.7	-229.7	-274.0	357.6	0.00	0.00	
2,400.0	11.58	230.02	2,365.1	-233.6	-278.6	363.6	0.00	0.00	
2,430.0	11.58	230.02	2,394.5	-237.5	-283.2	369.6	0.00	0.00	
2,460.0	11.58	230.02	2,423.9	-241.3	-287.8	375.6	0.00	0.00	
2,490.0	11.58	230.02	2,453.3	-245.2	-292.4	381.6	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									
Chevron 6-33D BHL	0.00	0.00	9,959.0	-853.0	-1,028.1	1,637,673.37	2,250,903.17	39.554114	-108.157073
- plan misses target center by 7566.1ft at 2490.0ft MD (2453.3 TVD, -245.2 N, -292.4 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									
Chevron 6-33D TOG	0.00	0.00	7,209.0	-833.0	-993.4	1,637,692.39	2,250,938.35	39.554169	-108.156950
- plan misses target center by 4842.9ft at 2490.0ft MD (2453.3 TVD, -245.2 N, -292.4 E)									
- Point									

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<b>Well:</b>	Chevron 6-33D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
2,500.0	11.58	230.02	2,463.1	-246.5	-294.0	383.7	0.00	0.00	
2,600.0	11.58	230.02	2,561.0	-259.4	-309.4	403.7	0.00	0.00	
2,700.0	11.58	230.02	2,659.0	-272.3	-324.7	423.8	0.00	0.00	
2,800.0	11.58	230.02	2,757.0	-285.2	-340.1	443.9	0.00	0.00	
2,900.0	11.58	230.02	2,854.9	-298.1	-355.5	463.9	0.00	0.00	
3,000.0	11.58	230.02	2,952.9	-311.0	-370.9	484.0	0.00	0.00	
3,100.0	11.58	230.02	3,050.9	-323.9	-386.3	504.1	0.00	0.00	
3,190.0	11.58	230.02	3,139.0	-335.5	-400.1	522.1	0.00	0.00	Wasatch
3,200.0	11.58	230.02	3,148.8	-336.8	-401.6	524.1	0.00	0.00	
3,300.0	11.58	230.02	3,246.8	-349.7	-417.0	544.2	0.00	0.00	
3,400.0	11.58	230.02	3,344.8	-362.6	-432.4	564.3	0.00	0.00	
3,500.0	11.58	230.02	3,442.7	-375.5	-447.8	584.4	0.00	0.00	
3,600.0	11.58	230.02	3,540.7	-388.4	-463.2	604.4	0.00	0.00	
3,700.0	11.58	230.02	3,638.7	-401.3	-478.5	624.5	0.00	0.00	
3,800.0	11.58	230.02	3,736.6	-414.1	-493.9	644.6	0.00	0.00	
3,900.0	11.58	230.02	3,834.6	-427.0	-509.3	664.6	0.00	0.00	
4,000.0	11.58	230.02	3,932.6	-439.9	-524.7	684.7	0.00	0.00	
4,100.0	11.58	230.02	4,030.5	-452.8	-540.1	704.8	0.00	0.00	
4,200.0	11.58	230.02	4,128.5	-465.7	-555.4	724.8	0.00	0.00	
4,300.0	11.58	230.02	4,226.5	-478.6	-570.8	744.9	0.00	0.00	
4,400.0	11.58	230.02	4,324.4	-491.5	-586.2	765.0	0.00	0.00	
4,500.0	11.58	230.02	4,422.4	-504.4	-601.6	785.1	0.00	0.00	
4,600.0	11.58	230.02	4,520.3	-517.3	-617.0	805.1	0.00	0.00	
4,700.0	11.58	230.02	4,618.3	-530.2	-632.3	825.2	0.00	0.00	
4,800.0	11.58	230.02	4,716.3	-543.1	-647.7	845.3	0.00	0.00	
4,900.0	11.58	230.02	4,814.2	-556.0	-663.1	865.3	0.00	0.00	
5,000.0	11.58	230.02	4,912.2	-568.9	-678.5	885.4	0.00	0.00	
5,100.0	11.58	230.02	5,010.2	-581.8	-693.9	905.5	0.00	0.00	
5,170.3	11.58	230.02	5,079.0	-590.9	-704.7	919.6	0.00	0.00	Fort Union
5,200.0	11.58	230.02	5,108.1	-594.7	-709.2	925.5	0.00	0.00	
5,300.0	11.58	230.02	5,206.1	-607.6	-724.6	945.6	0.00	0.00	
5,400.0	11.58	230.02	5,304.1	-620.5	-740.0	965.7	0.00	0.00	
5,500.0	11.58	230.02	5,402.0	-633.4	-755.4	985.8	0.00	0.00	
5,600.0	11.58	230.02	5,500.0	-646.3	-770.8	1,005.8	0.00	0.00	
5,680.6	11.58	230.02	5,579.0	-656.7	-783.2	1,022.0	0.00	0.00	Base Ft Union
5,700.0	11.58	230.02	5,598.0	-659.2	-786.1	1,025.9	0.00	0.00	
5,800.0	11.58	230.02	5,695.9	-672.1	-801.5	1,046.0	0.00	0.00	
5,900.0	11.58	230.02	5,793.9	-685.0	-816.9	1,066.0	0.00	0.00	
6,000.0	11.58	230.02	5,891.9	-697.9	-832.3	1,086.1	0.00	0.00	
6,100.0	11.58	230.02	5,989.8	-710.7	-847.6	1,106.2	0.00	0.00	
6,200.0	11.58	230.02	6,087.8	-723.6	-863.0	1,126.3	0.00	0.00	
6,300.0	11.58	230.02	6,185.8	-736.5	-878.4	1,146.3	0.00	0.00	
6,400.0	11.58	230.02	6,283.7	-749.4	-893.8	1,166.4	0.00	0.00	
6,500.0	11.58	230.02	6,381.7	-762.3	-909.2	1,186.5	0.00	0.00	
6,600.0	11.58	230.02	6,479.7	-775.2	-924.5	1,206.5	0.00	0.00	
6,700.0	11.58	230.02	6,577.6	-788.1	-939.9	1,226.6	0.00	0.00	
6,757.6	11.58	230.02	6,634.0	-795.5	-948.8	1,238.2	0.00	0.00	Start Drop -2.00
6,800.0	10.73	230.02	6,675.6	-800.8	-955.1	1,246.4	2.00	-2.00	
6,900.0	8.73	230.02	6,774.2	-811.7	-968.0	1,263.3	2.00	-2.00	
6,935.2	8.03	230.02	6,809.0	-815.0	-971.9	1,268.4	2.00	-2.00	Ohio Creek
7,000.0	6.73	230.02	6,873.3	-820.3	-978.3	1,276.7	2.00	-2.00	
7,100.0	4.73	230.02	6,972.8	-826.7	-986.0	1,286.7	2.00	-2.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site:</b>	Sec 6 T6S R96W (F06 696)	<b>North Reference:</b>	True
<b>Well:</b>	Chevron 6-33D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,136.3	4.00	230.02	7,009.0	-828.5	-988.1	1,289.5	2.00	-2.00	Williams Fork
7,200.0	2.73	230.02	7,072.6	-830.9	-991.0	1,293.2	2.00	-2.00	
7,300.0	0.73	230.02	7,172.5	-832.9	-993.3	1,296.2	2.00	-2.00	
7,336.5	0.00	0.00	7,209.0	-833.0	-993.4	1,296.5	2.00	-2.00	EOD; Inc=0° - TOG - Chevron 6-33D TOG
7,400.0	0.16	239.93	7,272.5	-833.0	-993.5	1,296.5	0.25	0.25	
7,500.0	0.41	239.93	7,372.5	-833.3	-994.0	1,297.0	0.25	0.25	
7,600.0	0.66	239.93	7,472.5	-833.8	-994.8	1,297.9	0.25	0.25	
7,692.8	0.89	239.93	7,565.3	-834.4	-995.8	1,299.2	0.25	0.25	
7,700.0	0.89	239.93	7,572.5	-834.4	-995.9	1,299.3	0.00	0.00	
7,800.0	0.89	239.93	7,672.5	-835.2	-997.3	1,300.8	0.00	0.00	
7,900.0	0.89	239.93	7,772.5	-836.0	-998.6	1,302.4	0.00	0.00	
8,000.0	0.89	239.93	7,872.5	-836.8	-1,000.0	1,303.9	0.00	0.00	
8,100.0	0.89	239.93	7,972.5	-837.6	-1,001.3	1,305.4	0.00	0.00	
8,200.0	0.89	239.93	8,072.4	-838.3	-1,002.7	1,307.0	0.00	0.00	
8,300.0	0.89	239.93	8,172.4	-839.1	-1,004.0	1,308.5	0.00	0.00	
8,400.0	0.89	239.93	8,272.4	-839.9	-1,005.4	1,310.0	0.00	0.00	
8,500.0	0.89	239.93	8,372.4	-840.7	-1,006.7	1,311.6	0.00	0.00	
8,600.0	0.89	239.93	8,472.4	-841.5	-1,008.1	1,313.1	0.00	0.00	
8,700.0	0.89	239.93	8,572.4	-842.2	-1,009.4	1,314.6	0.00	0.00	
8,800.0	0.89	239.93	8,672.4	-843.0	-1,010.7	1,316.2	0.00	0.00	
8,900.0	0.89	239.93	8,772.4	-843.8	-1,012.1	1,317.7	0.00	0.00	
9,000.0	0.89	239.93	8,872.3	-844.6	-1,013.4	1,319.2	0.00	0.00	
9,100.0	0.89	239.93	8,972.3	-845.3	-1,014.8	1,320.8	0.00	0.00	
9,200.0	0.89	239.93	9,072.3	-846.1	-1,016.1	1,322.3	0.00	0.00	
9,300.0	0.89	239.93	9,172.3	-846.9	-1,017.5	1,323.8	0.00	0.00	
9,400.0	0.89	239.93	9,272.3	-847.7	-1,018.8	1,325.4	0.00	0.00	
9,486.7	0.89	239.93	9,359.0	-848.4	-1,020.0	1,326.7	0.00	0.00	Cameo
9,500.0	0.89	239.93	9,372.3	-848.5	-1,020.2	1,326.9	0.00	0.00	
9,600.0	0.89	239.93	9,472.3	-849.2	-1,021.5	1,328.4	0.00	0.00	
9,700.0	0.89	239.93	9,572.3	-850.0	-1,022.9	1,329.9	0.00	0.00	
9,800.0	0.89	239.93	9,672.2	-850.8	-1,024.2	1,331.5	0.00	0.00	
9,900.0	0.89	239.93	9,772.2	-851.6	-1,025.5	1,333.0	0.00	0.00	
9,936.8	0.89	239.93	9,809.0	-851.9	-1,026.0	1,333.6	0.00	0.00	Rollins
10,000.0	0.89	239.93	9,872.2	-852.4	-1,026.9	1,334.5	0.00	0.00	
10,086.8	0.89	239.93	9,959.0	-853.0	-1,028.1	1,335.9	0.00	0.00	Chevron 6-33D BHL

Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
Chevron 6-33D BHL	0.00	0.00	9,959.0	-853.0	-1,028.1	1,637,673.37	2,250,903.17	39.554114	-108.157073
- plan hits target center									
- Rectangle (sides W50.0 H100.0 D0.0)									
Chevron 6-33D TOG	0.00	0.00	7,209.0	-833.0	-993.4	1,637,692.39	2,250,938.35	39.554169	-108.156950
- plan hits target center									
- Point									

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site:</b>	Sec 6 T6S R96W (F06 696)	<b>North Reference:</b>	True
<b>Well:</b>	Chevron 6-33D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,190.0	3,139.0	Wasatch		0.00		
5,170.3	5,079.0	Fort Union		0.00		
5,680.6	5,579.0	Base Ft Union		0.00		
6,935.2	6,809.0	Ohio Creek		0.00		
7,136.3	7,009.0	Williams Fork		0.00		
7,336.5	7,209.0	TOG		0.00		
9,486.7	9,359.0	Cameo		0.00		
9,936.8	9,809.0	Rollins		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
300.0	300.0	0.0	0.0	KOP @ 300' MD	
878.9	875.0	-37.5	-44.7	EOB; Inc=11.58°	
6,757.6	6,634.0	-795.5	-948.8	Start Drop -2.00	
7,336.5	7,209.0	-833.0	-993.4	EOD; Inc=0°	
10,086.8	9,959.0	-834.4	-995.8	TD at 10086.8	

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

**Garfield County**

**Sec 6 T6S R96W (F06 696)**

**Chevron 6-33D**

**DD**

**Plan #2**

## **Anticollision Report**

**17 November, 2010**



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,221.6ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	11/17/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	10,086.8	Plan #2 (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						
NESE Sec 1-T6S-R97W						
Chevron 6-31D(Berry) - DD - Plan #1	7,672.8	7,822.0	733.8	697.8	20.378	CC, ES
Chevron 6-31D(Berry) - DD - Plan #1	7,700.0	7,822.0	734.2	698.2	20.366	SF
Chevron-Marathon 13A-6D - DD - DD	7,322.0	7,329.6	1,072.8	1,039.7	32.494	CC, ES
Chevron-Marathon 13A-6D - DD - DD	10,086.8	10,033.4	1,114.9	1,073.7	27.098	SF
Chevron-Marathon 42B-1D - DD - Plan #1						Out of range
Chevron-Marathon 42D-1D - DD - DD						Out of range
Sec 6 T6S R96W (F06 696)						
Chevron 6-19D - DD - Plan #2	386.7	389.9	103.4	102.1	79.745	CC
Chevron 6-19D - DD - Plan #2	400.0	403.4	103.4	102.1	76.810	ES
Chevron 6-19D - DD - Plan #2	6,300.0	6,195.0	1,203.5	1,175.0	42.286	SF
Chevron 6-20D - DD - Plan #2	300.0	300.0	120.1	119.1	123.731	CC, ES
Chevron 6-20D - DD - Plan #2	5,300.0	5,203.8	1,159.2	1,137.8	54.176	SF
Chevron 6-21D - DD - Plan #2	455.0	459.9	86.8	85.2	55.758	CC, ES
Chevron 6-21D - DD - Plan #2	7,100.0	7,011.5	1,214.8	1,175.1	30.566	SF
Chevron 6-22D - DD - Plan #3	300.0	300.0	135.2	134.3	139.346	CC, ES
Chevron 6-22D - DD - Plan #3	1,100.0	1,086.1	237.3	233.6	63.676	SF
Chevron 6-23D - DD - Plan #2	200.0	200.0	164.1	163.4	264.050	CC, ES
Chevron 6-23D - DD - Plan #2	4,400.0	4,248.1	1,209.9	1,195.0	81.232	SF
Chevron 6-25D - DD - DD	0.0	0.0	149.0			
Chevron 6-25D - DD - DD	3,200.0	3,057.0	999.7	987.6	82.191	SF
Chevron 6-32D - DD - Plan #2	200.0	200.0	14.9	14.2	23.920	CC, ES
Chevron 6-32D - DD - Plan #2	10,086.8	10,121.5	339.9	288.7	6.630	SF
Chevron 6-34D - DD - Plan #2	300.0	300.0	15.0	14.1	15.488	CC, ES
Chevron 6-34D - DD - Plan #2	10,086.8	10,072.6	279.3	225.1	5.148	SF
Chevron 6-35D - DD - Plan #2	300.0	300.0	30.1	29.1	30.976	CC, ES
Chevron 6-35D - DD - Plan #2	10,086.8	10,054.6	647.6	594.6	12.222	SF
Chevron 6-36D - DD - Plan #2	388.2	389.6	43.3	42.0	33.363	CC
Chevron 6-36D - DD - Plan #2	400.0	401.4	43.4	42.0	32.285	ES
Chevron 6-36D - DD - Plan #2	10,086.8	10,050.0	951.8	900.0	18.362	SF
Chevron 6-37D - DD - Plan #2	300.0	300.0	60.1	59.1	61.952	CC, ES
Chevron 6-37D - DD - Plan #2	6,800.0	6,691.8	1,220.0	1,177.6	28.786	SF
Chevron 6-38D - DD - Plan #2	297.5	297.5	75.0	74.0	77.819	CC
Chevron 6-38D - DD - Plan #2	300.0	300.0	75.0	74.0	77.120	ES
Chevron 6-38D - DD - Plan #2	5,500.0	5,362.8	1,221.5	1,189.3	37.925	SF

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NESE Sec 1-T6S-R97W - Chevron 6-31D(Berry) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-													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		
5,900.0	5,793.9	6,294.0	6,163.0	21.6	24.2	-7.79	-1,559.3	-1,623.7	1,213.9	1,189.2	24.71	49.133		
6,000.0	5,891.9	6,385.4	6,252.2	22.0	24.6	-8.39	-1,551.9	-1,605.0	1,175.0	1,149.7	25.29	46.453		
6,100.0	5,989.8	6,476.8	6,341.4	22.4	25.0	-9.02	-1,544.5	-1,586.4	1,136.2	1,110.3	25.91	43.857		
6,200.0	6,087.8	6,568.2	6,430.5	22.8	25.4	-9.70	-1,537.2	-1,567.7	1,097.5	1,071.0	26.55	41.344		
6,300.0	6,185.8	6,659.6	6,519.7	23.2	25.8	-10.43	-1,529.8	-1,549.1	1,059.0	1,031.8	27.22	38.909		
6,400.0	6,283.7	6,751.0	6,608.9	23.6	26.2	-11.21	-1,522.4	-1,530.4	1,020.6	992.7	27.92	36.552		
6,500.0	6,381.7	6,842.4	6,698.0	24.0	26.6	-12.05	-1,515.0	-1,511.8	982.4	953.8	28.67	34.270		
6,600.0	6,479.7	6,933.8	6,787.2	24.3	26.9	-12.95	-1,507.7	-1,493.1	944.4	915.0	29.46	32.061		
6,700.0	6,577.6	7,025.2	6,876.4	24.7	27.3	-13.93	-1,500.3	-1,474.5	906.7	876.4	30.30	29.924		
6,800.0	6,675.6	7,116.7	6,965.7	25.1	27.7	-14.91	-1,492.9	-1,455.8	869.4	838.2	31.20	27.866		
6,900.0	6,774.2	7,200.0	7,046.9	25.4	28.1	-15.69	-1,486.2	-1,438.8	835.2	803.1	32.05	26.057		
7,000.0	6,873.3	7,281.4	7,126.7	25.7	28.4	-16.42	-1,480.2	-1,423.5	805.8	773.0	32.83	24.545		
7,100.0	6,972.8	7,359.8	7,203.9	25.9	28.6	-17.02	-1,475.1	-1,410.9	782.0	748.5	33.51	23.338		
7,200.0	7,072.6	7,440.0	7,283.2	26.1	28.9	-17.55	-1,470.8	-1,399.9	763.9	729.8	34.11	22.394		
7,300.0	7,172.5	7,521.4	7,364.0	26.2	29.1	-17.96	-1,467.2	-1,390.9	751.4	716.8	34.62	21.702		
7,400.0	7,272.5	7,600.0	7,442.3	26.3	29.2	-28.19	-1,464.6	-1,384.3	743.8	708.8	35.06	21.215		
7,500.0	7,372.5	7,686.4	7,528.5	26.4	29.3	-28.46	-1,462.6	-1,379.2	738.4	703.0	35.47	20.818		
7,600.0	7,472.5	7,769.3	7,611.3	26.5	29.4	-28.62	-1,461.6	-1,376.7	735.0	699.2	35.81	20.527		
7,672.8	7,545.3	7,822.0	7,664.0	26.5	29.5	-28.67	-1,461.5	-1,376.3	733.8	697.8	36.01	20.378 CC, ES		
7,700.0	7,572.5	7,822.0	7,664.0	26.6	29.5	-28.67	-1,461.5	-1,376.3	734.2	698.2	36.05	20.366 SF		
7,800.0	7,672.5	7,822.0	7,664.0	26.7	29.5	-28.67	-1,461.5	-1,376.3	744.6	708.4	36.21	20.562		
7,900.0	7,772.5	7,822.0	7,664.0	26.8	29.5	-28.67	-1,461.5	-1,376.3	767.9	731.6	36.37	21.113		
8,000.0	7,872.5	7,822.0	7,664.0	26.9	29.5	-28.67	-1,461.5	-1,376.3	803.1	766.6	36.53	21.984		
8,100.0	7,972.5	7,822.0	7,664.0	27.0	29.5	-28.67	-1,461.5	-1,376.3	848.7	812.0	36.69	23.130		
8,200.0	8,072.4	7,822.0	7,664.0	27.1	29.5	-28.67	-1,461.5	-1,376.3	903.1	866.3	36.85	24.505		
8,300.0	8,172.4	7,822.0	7,664.0	27.3	29.5	-28.67	-1,461.5	-1,376.3	964.8	927.8	37.02	26.066		
8,400.0	8,272.4	7,822.0	7,664.0	27.4	29.5	-28.67	-1,461.5	-1,376.3	1,032.6	995.4	37.18	27.774		
8,500.0	8,372.4	7,822.0	7,664.0	27.5	29.5	-28.67	-1,461.5	-1,376.3	1,105.2	1,067.9	37.34	29.599		
8,600.0	8,472.4	7,822.0	7,664.0	27.6	29.5	-28.67	-1,461.5	-1,376.3	1,181.9	1,144.4	37.50	31.515		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NESE Sec 1-T6S-R97W - Chevron-Marathon 13A-6D - DD - DD													Offset Site Error: 0.0 ft		
Survey Program: 169-													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			
6,400.0	6,283.7	6,472.0	6,449.5	23.6	14.0	-29.61	-1,869.9	-1,327.0	1,202.2	1,174.2	28.01	42.920			
6,500.0	6,381.7	6,558.9	6,536.2	24.0	14.2	-30.29	-1,868.8	-1,321.1	1,181.3	1,152.7	28.61	41.288			
6,600.0	6,479.7	6,668.6	6,645.7	24.3	14.4	-31.15	-1,867.1	-1,314.1	1,160.3	1,131.0	29.31	39.589			
6,700.0	6,577.6	6,758.3	6,735.3	24.7	14.6	-31.84	-1,865.3	-1,309.1	1,139.3	1,109.4	29.92	38.082			
6,800.0	6,675.6	6,845.0	6,821.8	25.1	14.8	-32.43	-1,864.0	-1,304.4	1,119.4	1,088.9	30.52	36.674			
6,900.0	6,774.2	6,939.0	6,915.6	25.4	15.0	-32.96	-1,863.3	-1,299.0	1,102.8	1,071.6	31.13	35.428			
7,000.0	6,873.3	7,029.8	7,006.3	25.7	15.1	-33.42	-1,863.3	-1,293.8	1,089.8	1,058.1	31.67	34.410			
7,100.0	6,972.8	7,119.5	7,095.9	25.9	15.3	-33.82	-1,863.8	-1,289.3	1,080.5	1,048.4	32.15	33.610			
7,200.0	7,072.6	7,212.4	7,188.7	26.1	15.5	-34.15	-1,864.8	-1,285.5	1,075.0	1,042.4	32.58	32.999			
7,300.0	7,172.5	7,309.2	7,285.4	26.2	15.6	-34.40	-1,866.0	-1,282.2	1,072.8	1,039.9	32.94	32.567			
7,322.0	7,194.5	7,329.6	7,305.9	26.2	15.7	-35.00	-1,866.3	-1,281.7	1,072.8	1,039.7	33.01	32.494	CC, ES		
7,400.0	7,272.5	7,400.8	7,377.0	26.3	15.8	-44.43	-1,867.4	-1,280.2	1,073.4	1,040.2	33.25	32.281			
7,500.0	7,372.5	7,502.2	7,478.4	26.4	15.9	-44.55	-1,869.1	-1,278.9	1,074.3	1,040.7	33.58	31.993			
7,600.0	7,472.5	7,600.7	7,576.8	26.5	16.1	-44.65	-1,870.5	-1,278.0	1,074.9	1,041.0	33.90	31.705			
7,700.0	7,572.5	7,698.9	7,675.0	26.6	16.2	-44.76	-1,872.1	-1,277.2	1,075.2	1,041.0	34.23	31.411			
7,800.0	7,672.5	7,796.1	7,772.2	26.7	16.4	-44.87	-1,873.9	-1,276.5	1,075.7	1,041.1	34.56	31.130			
7,900.0	7,772.5	7,891.0	7,867.1	26.8	16.5	-44.97	-1,875.9	-1,276.2	1,076.6	1,041.7	34.87	30.873			
8,000.0	7,872.5	7,988.4	7,964.4	26.9	16.6	-45.06	-1,878.2	-1,276.2	1,077.8	1,042.6	35.19	30.630			
8,100.0	7,972.5	8,086.1	8,062.2	27.0	16.8	-45.14	-1,880.7	-1,276.4	1,079.2	1,043.7	35.50	30.399			
8,200.0	8,072.4	8,183.4	8,159.4	27.1	16.9	-45.22	-1,883.4	-1,276.8	1,080.8	1,045.0	35.81	30.182			
8,300.0	8,172.4	8,284.1	8,260.1	27.3	17.0	-45.27	-1,886.2	-1,277.7	1,082.7	1,046.6	36.11	29.980			
8,400.0	8,272.4	8,389.6	8,365.5	27.4	17.2	-45.30	-1,888.5	-1,278.9	1,084.0	1,047.6	36.42	29.762			
8,500.0	8,372.4	8,491.3	8,467.2	27.5	17.3	-45.34	-1,890.7	-1,279.7	1,085.2	1,048.5	36.73	29.544			
8,600.0	8,472.4	8,592.5	8,568.4	27.6	17.4	-45.40	-1,892.7	-1,280.2	1,086.1	1,049.1	37.05	29.319			
8,700.0	8,572.4	8,687.2	8,663.1	27.7	17.6	-45.45	-1,894.7	-1,280.9	1,087.3	1,049.9	37.34	29.115			
8,800.0	8,672.4	8,782.1	8,757.9	27.8	17.7	-45.47	-1,897.1	-1,282.2	1,089.0	1,051.3	37.63	28.937			
8,900.0	8,772.4	8,878.0	8,853.8	28.0	17.8	-45.47	-1,899.8	-1,284.0	1,091.0	1,053.1	37.92	28.775			
9,000.0	8,872.3	8,976.3	8,952.0	28.1	17.9	-45.46	-1,902.7	-1,286.1	1,093.4	1,055.2	38.20	28.623			
9,100.0	8,972.3	9,073.8	9,049.4	28.2	18.1	-45.42	-1,905.7	-1,288.7	1,095.9	1,057.4	38.47	28.486			
9,200.0	9,072.3	9,168.8	9,144.3	28.3	18.2	-45.36	-1,908.7	-1,291.9	1,098.8	1,060.0	38.73	28.368			
9,300.0	9,172.3	9,292.3	9,267.7	28.4	18.3	-45.31	-1,912.2	-1,295.1	1,101.1	1,062.1	39.05	28.201			
9,400.0	9,272.3	9,401.9	9,377.3	28.6	18.5	-45.28	-1,913.3	-1,297.3	1,101.5	1,062.1	39.34	27.995			
9,493.4	9,365.7	9,496.3	9,471.6	28.7	18.6	-45.25	-1,913.9	-1,299.1	1,101.4	1,061.8	39.61	27.804			
9,500.0	9,372.3	9,502.5	9,477.9	28.7	18.6	-45.25	-1,913.9	-1,299.2	1,101.4	1,061.8	39.63	27.791			
9,600.0	9,472.3	9,597.6	9,572.9	28.8	18.8	-45.25	-1,914.9	-1,300.5	1,101.7	1,061.8	39.92	27.596			
9,700.0	9,572.3	9,689.6	9,664.9	28.9	18.9	-45.23	-1,916.2	-1,302.2	1,102.4	1,062.2	40.20	27.423			
9,800.0	9,672.2	9,777.1	9,752.4	29.0	19.0	-45.19	-1,918.2	-1,304.7	1,104.2	1,063.8	40.46	27.293			
9,900.0	9,772.2	9,866.6	9,841.7	29.2	19.1	-45.10	-1,920.9	-1,308.1	1,107.1	1,066.4	40.70	27.198			
10,000.0	9,872.2	9,955.9	9,930.9	29.3	19.2	-44.99	-1,924.3	-1,312.3	1,110.8	1,069.9	40.94	27.132			
10,086.8	9,959.0	10,033.4	10,008.2	29.4	19.3	-44.87	-1,927.7	-1,316.6	1,114.9	1,073.7	41.14	27.098	SF		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec 6 T6S R96W (F06 696) - Chevron 6-19D - DD - Plan #2		Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							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	36.77	84.1	62.9	105.0								
100.0	100.0	100.0	100.0	0.1	0.1	36.77	84.1	62.9	105.0	104.8	0.27	385.788					
200.0	200.0	200.0	200.0	0.3	0.3	36.77	84.1	62.9	105.0	104.4	0.62	169.053					
300.0	300.0	301.8	301.8	0.5	0.5	37.63	82.5	63.6	104.2	103.2	0.97	106.972					
386.7	386.7	389.9	389.7	0.6	0.7	169.95	78.4	65.4	103.4	102.1	1.30	79.745 CC					
400.0	400.0	403.4	403.2	0.7	0.7	170.45	77.5	65.7	103.4	102.1	1.35	76.810 ES					
500.0	499.8	504.1	503.5	0.9	0.9	175.21	69.5	69.2	105.1	103.3	1.74	60.494					
600.0	599.5	603.5	602.5	1.1	1.1	-179.81	60.7	73.0	110.7	108.5	2.14	51.836					
700.0	698.7	702.6	701.1	1.3	1.4	-175.46	52.0	76.8	120.5	118.0	2.54	47.488					
800.0	797.5	801.3	799.4	1.6	1.6	-171.96	43.3	80.5	134.3	131.4	2.94	45.657					
900.0	895.6	899.6	897.2	2.0	1.8	-169.35	34.7	84.3	151.9	148.5	3.35	45.299					
1,000.0	993.6	997.7	994.8	2.4	2.1	-167.39	26.0	88.0	170.7	166.9	3.78	45.168					
1,100.0	1,091.6	1,095.7	1,092.4	2.7	2.3	-165.82	17.4	91.7	189.7	185.5	4.21	45.031					
1,200.0	1,189.5	1,193.8	1,190.0	3.1	2.5	-164.54	8.7	95.4	208.8	204.1	4.65	44.890					
1,300.0	1,287.5	1,291.8	1,287.7	3.5	2.8	-163.47	0.1	99.2	227.9	222.8	5.09	44.748					
1,400.0	1,385.5	1,389.9	1,385.3	3.9	3.0	-162.57	-8.5	102.9	247.2	241.6	5.54	44.609					
1,500.0	1,483.4	1,488.0	1,482.9	4.3	3.3	-161.80	-17.2	106.6	266.5	260.5	5.99	44.475					
1,600.0	1,581.4	1,586.0	1,580.5	4.7	3.5	-161.13	-25.8	110.4	285.8	279.3	6.44	44.347					
1,700.0	1,679.4	1,684.1	1,678.1	5.0	3.7	-160.55	-34.4	114.1	305.1	298.2	6.90	44.226					
1,800.0	1,777.3	1,782.2	1,775.7	5.4	4.0	-160.04	-43.1	117.8	324.5	317.2	7.36	44.112					
1,900.0	1,875.3	1,880.2	1,873.3	5.8	4.2	-159.58	-51.7	121.5	343.9	336.1	7.82	44.004					
2,000.0	1,973.3	1,978.3	1,970.9	6.2	4.4	-159.17	-60.3	125.3	363.4	355.1	8.28	43.903					
2,100.0	2,071.2	2,076.4	2,068.6	6.6	4.7	-158.81	-69.0	129.0	382.8	374.1	8.74	43.809					
2,200.0	2,169.2	2,174.4	2,166.2	7.0	4.9	-158.48	-77.6	132.7	402.3	393.1	9.20	43.720					
2,300.0	2,267.2	2,272.5	2,263.8	7.4	5.1	-158.18	-86.2	136.5	421.7	412.1	9.66	43.637					
2,400.0	2,365.1	2,370.5	2,361.4	7.8	5.4	-157.91	-94.9	140.2	441.2	431.1	10.13	43.559					
2,500.0	2,463.1	2,468.6	2,459.0	8.2	5.6	-157.66	-103.5	143.9	460.7	450.1	10.59	43.486					
2,600.0	2,561.0	2,566.7	2,556.6	8.6	5.9	-157.43	-112.1	147.7	480.2	469.1	11.06	43.417					
2,700.0	2,659.0	2,664.7	2,654.2	9.0	6.1	-157.21	-120.8	151.4	499.7	488.2	11.53	43.352					
2,800.0	2,757.0	2,762.8	2,751.8	9.4	6.3	-157.02	-129.4	155.1	519.2	507.2	11.99	43.291					
2,900.0	2,854.9	2,860.9	2,849.4	9.8	6.6	-156.84	-138.0	158.8	538.7	526.2	12.46	43.233					
3,000.0	2,952.9	2,958.9	2,947.1	10.1	6.8	-156.67	-146.7	162.6	558.2	545.3	12.93	43.179					
3,100.0	3,050.9	3,057.0	3,044.7	10.5	7.0	-156.51	-155.3	166.3	577.7	564.3	13.40	43.128					
3,200.0	3,148.8	3,155.1	3,142.3	10.9	7.3	-156.36	-163.9	170.0	597.3	583.4	13.86	43.079					
3,300.0	3,246.8	3,253.1	3,239.9	11.3	7.5	-156.22	-172.6	173.8	616.8	602.5	14.33	43.033					
3,400.0	3,344.8	3,351.2	3,337.5	11.7	7.7	-156.09	-181.2	177.5	636.3	621.5	14.80	42.989					
3,500.0	3,442.7	3,449.3	3,435.1	12.1	8.0	-155.97	-189.8	181.2	655.9	640.6	15.27	42.947					
3,600.0	3,540.7	3,547.3	3,532.7	12.5	8.2	-155.86	-198.5	185.0	675.4	659.7	15.74	42.908					
3,700.0	3,638.7	3,645.4	3,630.3	12.9	8.5	-155.75	-207.1	188.7	694.9	678.7	16.21	42.870					
3,800.0	3,736.6	3,743.4	3,728.0	13.3	8.7	-155.65	-215.7	192.4	714.5	697.8	16.68	42.834					
3,900.0	3,834.6	3,841.5	3,825.6	13.7	8.9	-155.55	-224.4	196.1	734.0	716.9	17.15	42.800					
4,000.0	3,932.6	3,939.6	3,923.2	14.1	9.2	-155.46	-233.0	199.9	753.6	736.0	17.62	42.767					
4,100.0	4,030.5	4,037.6	4,020.8	14.5	9.4	-155.37	-241.6	203.6	773.1	755.0	18.09	42.736					
4,200.0	4,128.5	4,135.7	4,118.4	14.9	9.6	-155.29	-250.3	207.3	792.7	774.1	18.56	42.706					
4,300.0	4,226.5	4,233.8	4,216.0	15.3	9.9	-155.21	-258.9	211.1	812.2	793.2	19.03	42.678					
4,400.0	4,324.4	4,331.8	4,313.6	15.7	10.1	-155.13	-267.5	214.8	831.8	812.3	19.50	42.650					
4,500.0	4,422.4	4,429.9	4,411.2	16.1	10.4	-155.06	-276.2	218.5	851.3	831.4	19.97	42.624					
4,600.0	4,520.3	4,528.0	4,508.9	16.5	10.6	-154.99	-284.8	222.2	870.9	850.4	20.44	42.599					
4,700.0	4,618.3	4,626.0	4,606.5	16.8	10.8	-154.93	-293.4	226.0	890.4	869.5	20.91	42.575					
4,800.0	4,716.3	4,724.1	4,704.1	17.2	11.1	-154.86	-302.1	229.7	910.0	888.6	21.39	42.551					
4,900.0	4,814.2	4,822.1	4,801.7	17.6	11.3	-154.80	-310.7	233.4	929.6	907.7	21.86	42.529					
5,000.0	4,912.2	4,920.2	4,899.3	18.0	11.5	-154.75	-319.3	237.2	949.1	926.8	22.33	42.507					

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Sec 6 T6S R96W (F06 696) - Chevron 6-19D - DD - Plan #2		Offset Site Error:		0.0 ft	
Survey Program:												0-MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							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					
5,100.0	5,010.2	5,018.3	4,996.9	18.4	11.8	-154.69	-328.0	240.9	968.7	945.9	22.80	42.487					
5,200.0	5,108.1	5,116.3	5,094.5	18.8	12.0	-154.64	-336.6	244.6	988.2	965.0	23.27	42.467					
5,300.0	5,206.1	5,214.4	5,192.1	19.2	12.3	-154.59	-345.2	248.4	1,007.8	984.1	23.74	42.447					
5,400.0	5,304.1	5,312.5	5,289.7	19.6	12.5	-154.54	-353.9	252.1	1,027.4	1,003.2	24.21	42.429					
5,500.0	5,402.0	5,410.5	5,387.4	20.0	12.7	-154.49	-362.5	255.8	1,046.9	1,022.2	24.69	42.411					
5,600.0	5,500.0	5,508.6	5,485.0	20.4	13.0	-154.45	-371.2	259.5	1,066.5	1,041.3	25.16	42.393					
5,700.0	5,598.0	5,606.7	5,582.6	20.8	13.2	-154.40	-379.8	263.3	1,086.1	1,060.4	25.63	42.377					
5,800.0	5,695.9	5,704.7	5,680.2	21.2	13.4	-154.36	-388.4	267.0	1,105.6	1,079.5	26.10	42.360					
5,900.0	5,793.9	5,802.8	5,777.8	21.6	13.7	-154.32	-397.1	270.7	1,125.2	1,098.6	26.57	42.345					
6,000.0	5,891.9	5,900.9	5,875.4	22.0	13.9	-154.28	-405.7	274.5	1,144.8	1,117.7	27.04	42.329					
6,100.0	5,989.8	5,998.9	5,973.0	22.4	14.2	-154.24	-414.3	278.2	1,164.3	1,136.8	27.52	42.315					
6,200.0	6,087.8	6,097.0	6,070.6	22.8	14.4	-154.20	-423.0	281.9	1,183.9	1,155.9	27.99	42.300					
6,300.0	6,185.8	6,195.0	6,168.3	23.2	14.6	-154.17	-431.6	285.6	1,203.5	1,175.0	28.46	42.286 SF					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	36.79	96.2	71.9	120.1					
100.0	100.0	100.0	100.0	0.1	0.1	36.79	96.2	71.9	120.1	119.8	0.27	440.989		
200.0	200.0	200.0	200.0	0.3	0.3	36.79	96.2	71.9	120.1	119.4	0.62	193.242		
300.0	300.0	300.0	300.0	0.5	0.5	36.79	96.2	71.9	120.1	119.1	0.97	123.731 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	166.95	96.2	71.9	121.8	120.4	1.32	92.311		
500.0	499.8	499.8	499.8	0.9	0.8	167.46	96.2	71.9	126.9	125.2	1.67	76.106		
600.0	599.5	599.9	599.9	1.1	1.0	168.96	95.0	73.2	135.2	133.2	2.02	67.078		
700.0	698.7	699.2	699.1	1.3	1.2	171.86	91.4	76.9	146.9	144.6	2.37	61.978		
800.0	797.5	797.6	797.1	1.6	1.4	175.46	85.8	82.6	162.5	159.7	2.73	59.475		
900.0	895.6	895.2	894.4	2.0	1.6	178.57	80.1	88.6	181.9	178.8	3.10	58.746		
1,000.0	993.6	992.6	991.5	2.4	1.8	-178.91	74.3	94.5	202.8	199.4	3.48	58.372		
1,100.0	1,091.6	1,090.1	1,088.5	2.7	2.0	-176.86	68.6	100.5	224.1	220.2	3.86	58.073		
1,200.0	1,189.5	1,187.5	1,185.6	3.1	2.2	-175.17	62.9	106.4	245.6	241.3	4.25	57.816		
1,300.0	1,287.5	1,285.0	1,282.7	3.5	2.4	-173.75	57.2	112.4	267.2	262.5	4.64	57.585		
1,400.0	1,385.5	1,382.4	1,379.8	3.9	2.7	-172.54	51.4	118.3	289.0	283.9	5.04	57.372		
1,500.0	1,483.4	1,479.8	1,476.9	4.3	2.9	-171.50	45.7	124.2	310.8	305.4	5.44	57.174		
1,600.0	1,581.4	1,577.3	1,574.0	4.7	3.1	-170.60	40.0	130.2	332.8	327.0	5.84	56.989		
1,700.0	1,679.4	1,674.7	1,671.0	5.0	3.3	-169.81	34.3	136.1	354.8	348.6	6.25	56.815		
1,800.0	1,777.3	1,772.1	1,768.1	5.4	3.5	-169.11	28.5	142.1	376.9	370.3	6.65	56.651		
1,900.0	1,875.3	1,869.6	1,865.2	5.8	3.8	-168.49	22.8	148.0	399.0	392.0	7.06	56.498		
2,000.0	1,973.3	1,967.0	1,962.3	6.2	4.0	-167.94	17.1	153.9	421.2	413.7	7.47	56.353		
2,100.0	2,071.2	2,064.4	2,059.4	6.6	4.2	-167.44	11.3	159.9	443.4	435.5	7.89	56.218		
2,200.0	2,169.2	2,161.9	2,156.5	7.0	4.4	-166.99	5.6	165.8	465.7	457.4	8.30	56.090		
2,300.0	2,267.2	2,259.3	2,253.5	7.4	4.6	-166.57	-0.1	171.8	487.9	479.2	8.72	55.970		
2,400.0	2,365.1	2,356.7	2,350.6	7.8	4.9	-166.20	-5.8	177.7	510.2	501.1	9.13	55.856		
2,500.0	2,463.1	2,454.2	2,447.7	8.2	5.1	-165.85	-11.6	183.6	532.5	523.0	9.55	55.750		
2,600.0	2,561.0	2,551.6	2,544.8	8.6	5.3	-165.54	-17.3	189.6	554.8	544.9	9.97	55.649		
2,700.0	2,659.0	2,649.0	2,641.9	9.0	5.5	-165.25	-23.0	195.5	577.2	566.8	10.39	55.554		
2,800.0	2,757.0	2,746.5	2,739.0	9.4	5.7	-164.98	-28.7	201.5	599.5	588.7	10.81	55.464		
2,900.0	2,854.9	2,843.9	2,836.0	9.8	6.0	-164.73	-34.5	207.4	621.9	610.6	11.23	55.379		
3,000.0	2,952.9	2,941.3	2,933.1	10.1	6.2	-164.49	-40.2	213.4	644.2	632.6	11.65	55.299		
3,100.0	3,050.9	3,038.8	3,030.2	10.5	6.4	-164.27	-45.9	219.3	666.6	654.5	12.07	55.223		
3,200.0	3,148.8	3,136.2	3,127.3	10.9	6.6	-164.07	-51.6	225.2	689.0	676.5	12.49	55.150		
3,300.0	3,246.8	3,233.6	3,224.4	11.3	6.8	-163.88	-57.4	231.2	711.4	698.5	12.92	55.081		
3,400.0	3,344.8	3,331.1	3,321.5	11.7	7.1	-163.70	-63.1	237.1	733.8	720.5	13.34	55.016		
3,500.0	3,442.7	3,428.5	3,418.5	12.1	7.3	-163.53	-68.8	243.1	756.2	742.5	13.76	54.954		
3,600.0	3,540.7	3,525.9	3,515.6	12.5	7.5	-163.37	-74.6	249.0	778.6	764.4	14.18	54.894		
3,700.0	3,638.7	3,623.4	3,612.7	12.9	7.7	-163.22	-80.3	254.9	801.1	786.4	14.61	54.838		
3,800.0	3,736.6	3,720.8	3,709.8	13.3	8.0	-163.08	-86.0	260.9	823.5	808.4	15.03	54.784		
3,900.0	3,834.6	3,818.2	3,806.9	13.7	8.2	-162.95	-91.7	266.8	845.9	830.5	15.46	54.732		
4,000.0	3,932.6	3,915.7	3,904.0	14.1	8.4	-162.82	-97.5	272.8	868.3	852.5	15.88	54.683		
4,100.0	4,030.5	4,013.1	4,001.0	14.5	8.6	-162.70	-103.2	278.7	890.8	874.5	16.30	54.636		
4,200.0	4,128.5	4,110.5	4,098.1	14.9	8.8	-162.59	-108.9	284.6	913.2	896.5	16.73	54.591		
4,300.0	4,226.5	4,208.0	4,195.2	15.3	9.1	-162.48	-114.6	290.6	935.7	918.5	17.15	54.547		
4,400.0	4,324.4	4,305.4	4,292.3	15.7	9.3	-162.37	-120.4	296.5	958.1	940.5	17.58	54.506		
4,500.0	4,422.4	4,402.8	4,389.4	16.1	9.5	-162.27	-126.1	302.5	980.6	962.6	18.00	54.466		
4,600.0	4,520.3	4,500.3	4,486.5	16.5	9.7	-162.18	-131.8	308.4	1,003.0	984.6	18.43	54.427		
4,700.0	4,618.3	4,597.7	4,583.5	16.8	10.0	-162.09	-137.5	314.3	1,025.5	1,006.6	18.85	54.390		
4,800.0	4,716.3	4,695.1	4,680.6	17.2	10.2	-162.00	-143.3	320.3	1,047.9	1,028.7	19.28	54.355		
4,900.0	4,814.2	4,792.6	4,777.7	17.6	10.4	-161.92	-149.0	326.2	1,070.4	1,050.7	19.70	54.321		
5,000.0	4,912.2	4,890.0	4,874.8	18.0	10.6	-161.84	-154.7	332.2	1,092.9	1,072.7	20.13	54.288		
5,100.0	5,010.2	4,987.4	4,971.9	18.4	10.9	-161.76	-160.5	338.1	1,115.3	1,094.8	20.56	54.256		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec 6 T6S R96W (F06 696) - Chevron 6-20D - DD - Plan #2		Offset Site Error:		0.0 ft	
Survey Program:													0-MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							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)								
5,200.0	5,108.1	5,087.1	5,071.2	18.8	11.1	-161.69	-166.3	344.2	1,137.8	1,116.8	20.99	54.215						
5,300.0	5,206.1	5,203.8	5,187.7	19.2	11.3	-161.74	-171.1	349.2	1,159.2	1,137.8	21.40	54.176 SF						
5,400.0	5,304.1	5,320.4	5,304.3	19.6	11.5	-162.00	-172.6	350.7	1,179.1	1,157.4	21.75	54.220						
5,500.0	5,402.0	5,423.8	5,407.6	20.0	11.6	-162.31	-172.8	350.5	1,198.0	1,175.9	22.07	54.291						
5,600.0	5,500.0	5,526.6	5,510.4	20.4	11.8	-162.61	-173.1	349.9	1,216.5	1,194.1	22.39	54.341						

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	36.75	72.1	53.9	90.0					
100.0	100.0	100.0	100.0	0.1	0.1	36.75	72.1	53.9	90.0	89.7	0.27	330.586		
200.0	200.0	200.0	200.0	0.3	0.3	36.75	72.1	53.9	90.0	89.4	0.62	144.864		
300.0	300.0	302.1	302.1	0.5	0.5	37.61	70.3	54.2	88.8	87.8	0.97	91.169		
400.0	400.0	404.0	403.9	0.7	0.7	170.53	65.0	55.2	87.1	85.7	1.34	64.848		
455.0	454.9	459.9	459.6	0.8	0.8	173.12	60.5	56.0	86.8	85.2	1.56	55.758 CC, ES		
500.0	499.8	505.6	505.0	0.9	0.9	175.74	56.1	56.9	87.0	85.3	1.73	50.181		
600.0	599.5	606.5	605.1	1.1	1.2	-177.15	43.8	59.2	89.5	87.3	2.17	41.303		
700.0	698.7	705.7	703.3	1.3	1.5	-169.88	29.9	61.8	96.0	93.4	2.63	36.570		
800.0	797.5	804.5	801.1	1.6	1.8	-164.09	16.0	64.4	107.2	104.1	3.10	34.542		
900.0	895.6	903.0	898.6	2.0	2.1	-159.95	2.1	67.0	122.5	118.9	3.60	33.994		
1,000.0	993.6	1,001.4	995.9	2.4	2.3	-156.97	-11.7	69.6	139.2	135.1	4.13	33.729		
1,100.0	1,091.6	1,099.7	1,093.3	2.7	2.6	-154.62	-25.5	72.2	156.2	151.5	4.66	33.487		
1,200.0	1,189.5	1,198.1	1,190.6	3.1	2.9	-152.74	-39.4	74.8	173.4	168.2	5.21	33.267		
1,300.0	1,287.5	1,296.5	1,288.0	3.5	3.2	-151.20	-53.2	77.4	190.8	185.0	5.77	33.068		
1,400.0	1,385.5	1,394.8	1,385.3	3.9	3.5	-149.92	-67.0	80.0	208.2	201.9	6.33	32.890		
1,500.0	1,483.4	1,493.2	1,482.7	4.3	3.8	-148.83	-80.9	82.6	225.8	218.9	6.90	32.730		
1,600.0	1,581.4	1,591.5	1,580.0	4.7	4.1	-147.90	-94.7	85.2	243.4	235.9	7.47	32.588		
1,700.0	1,679.4	1,689.9	1,677.4	5.0	4.4	-147.10	-108.5	87.8	261.1	253.1	8.04	32.460		
1,800.0	1,777.3	1,788.3	1,774.7	5.4	4.7	-146.40	-122.4	90.4	278.8	270.2	8.62	32.345		
1,900.0	1,875.3	1,886.6	1,872.1	5.8	5.0	-145.78	-136.2	93.0	296.6	287.4	9.20	32.242		
2,000.0	1,973.3	1,985.0	1,969.5	6.2	5.3	-145.23	-150.0	95.6	314.4	304.6	9.78	32.148		
2,100.0	2,071.2	2,083.4	2,066.8	6.6	5.6	-144.74	-163.9	98.2	332.2	321.8	10.36	32.064		
2,200.0	2,169.2	2,181.7	2,164.2	7.0	5.9	-144.30	-177.7	100.8	350.0	339.0	10.94	31.987		
2,300.0	2,267.2	2,280.1	2,261.5	7.4	6.2	-143.91	-191.5	103.4	367.8	356.3	11.52	31.917		
2,400.0	2,365.1	2,378.5	2,358.9	7.8	6.5	-143.55	-205.4	106.0	385.7	373.6	12.11	31.852		
2,500.0	2,463.1	2,476.8	2,456.2	8.2	6.8	-143.22	-219.2	108.6	403.6	390.9	12.69	31.793		
2,600.0	2,561.0	2,575.2	2,553.6	8.6	7.1	-142.92	-233.0	111.2	421.5	408.2	13.28	31.739		
2,700.0	2,659.0	2,673.5	2,650.9	9.0	7.4	-142.64	-246.9	113.8	439.4	425.5	13.87	31.689		
2,800.0	2,757.0	2,771.9	2,748.3	9.4	7.7	-142.39	-260.7	116.4	457.3	442.8	14.45	31.642		
2,900.0	2,854.9	2,870.3	2,845.6	9.8	8.0	-142.15	-274.5	119.0	475.2	460.1	15.04	31.599		
3,000.0	2,952.9	2,968.6	2,943.0	10.1	8.3	-141.94	-288.4	121.6	493.1	477.5	15.63	31.559		
3,100.0	3,050.9	3,067.0	3,040.3	10.5	8.6	-141.73	-302.2	124.2	511.0	494.8	16.21	31.521		
3,200.0	3,148.8	3,165.4	3,137.7	10.9	8.9	-141.54	-316.0	126.8	529.0	512.2	16.80	31.486		
3,300.0	3,246.8	3,263.7	3,235.0	11.3	9.2	-141.37	-329.9	129.4	546.9	529.5	17.39	31.453		
3,400.0	3,344.8	3,362.1	3,332.4	11.7	9.5	-141.20	-343.7	132.0	564.9	546.9	17.98	31.422		
3,500.0	3,442.7	3,460.5	3,429.7	12.1	9.8	-141.05	-357.5	134.6	582.8	564.2	18.56	31.393		
3,600.0	3,540.7	3,558.8	3,527.1	12.5	10.1	-140.90	-371.4	137.2	600.8	581.6	19.15	31.366		
3,700.0	3,638.7	3,657.2	3,624.4	12.9	10.4	-140.76	-385.2	139.8	618.7	599.0	19.74	31.340		
3,800.0	3,736.6	3,755.6	3,721.8	13.3	10.7	-140.63	-399.0	142.4	636.7	616.3	20.33	31.316		
3,900.0	3,834.6	3,853.9	3,819.1	13.7	11.0	-140.51	-412.9	145.0	654.6	633.7	20.92	31.293		
4,000.0	3,932.6	3,952.3	3,916.5	14.1	11.3	-140.40	-426.7	147.6	672.6	651.1	21.51	31.271		
4,100.0	4,030.5	4,050.6	4,013.8	14.5	11.6	-140.29	-440.5	150.2	690.6	668.5	22.10	31.250		
4,200.0	4,128.5	4,149.0	4,111.2	14.9	11.9	-140.18	-454.4	152.8	708.5	685.9	22.69	31.231		
4,300.0	4,226.5	4,247.4	4,208.5	15.3	12.2	-140.08	-468.2	155.4	726.5	703.2	23.28	31.212		
4,400.0	4,324.4	4,345.7	4,305.9	15.7	12.5	-139.99	-482.0	158.0	744.5	720.6	23.87	31.194		
4,500.0	4,422.4	4,444.1	4,403.2	16.1	12.8	-139.90	-495.9	160.6	762.5	738.0	24.46	31.177		
4,600.0	4,520.3	4,542.5	4,500.6	16.5	13.1	-139.81	-509.7	163.2	780.4	755.4	25.05	31.161		
4,700.0	4,618.3	4,640.8	4,597.9	16.8	13.4	-139.73	-523.5	165.8	798.4	772.8	25.64	31.145		
4,800.0	4,716.3	4,739.2	4,695.3	17.2	13.7	-139.65	-537.4	168.4	816.4	790.2	26.23	31.131		
4,900.0	4,814.2	4,837.6	4,792.7	17.6	14.0	-139.58	-551.2	171.0	834.4	807.6	26.82	31.116		
5,000.0	4,912.2	4,935.9	4,890.0	18.0	14.3	-139.50	-565.0	173.6	852.4	825.0	27.41	31.103		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
5,100.0	5,010.2	5,034.3	4,987.4	18.4	14.6	-139.43	-578.9	176.2	870.4	842.4	28.00	31.090		
5,200.0	5,108.1	5,132.6	5,084.7	18.8	14.9	-139.37	-592.7	178.8	888.3	859.8	28.59	31.077		
5,300.0	5,206.1	5,231.0	5,182.1	19.2	15.2	-139.31	-606.5	181.4	906.3	877.2	29.18	31.065		
5,400.0	5,304.1	5,329.4	5,279.4	19.6	15.5	-139.24	-620.4	184.0	924.3	894.6	29.77	31.054		
5,500.0	5,402.0	5,427.7	5,376.8	20.0	15.8	-139.19	-634.2	186.6	942.3	912.0	30.36	31.042		
5,600.0	5,500.0	5,526.1	5,474.1	20.4	16.1	-139.13	-648.0	189.2	960.3	929.4	30.95	31.032		
5,700.0	5,598.0	5,624.5	5,571.5	20.8	16.4	-139.07	-661.9	191.8	978.3	946.8	31.54	31.021		
5,800.0	5,695.9	5,722.8	5,668.8	21.2	16.7	-139.02	-675.7	194.4	996.3	964.2	32.13	31.011		
5,900.0	5,793.9	5,821.2	5,766.2	21.6	17.0	-138.97	-689.5	197.0	1,014.3	981.6	32.72	31.002		
6,000.0	5,891.9	5,919.6	5,863.5	22.0	17.3	-138.92	-703.4	199.6	1,032.3	999.0	33.31	30.993		
6,100.0	5,989.8	6,017.9	5,960.9	22.4	17.6	-138.88	-717.2	202.2	1,050.3	1,016.4	33.90	30.984		
6,200.0	6,087.8	6,116.3	6,058.2	22.8	17.9	-138.83	-731.0	204.8	1,068.3	1,033.8	34.49	30.975		
6,300.0	6,185.8	6,214.7	6,155.6	23.2	18.2	-138.79	-744.9	207.4	1,086.3	1,051.2	35.08	30.967		
6,400.0	6,283.7	6,313.0	6,252.9	23.6	18.5	-138.74	-758.7	210.0	1,104.3	1,068.6	35.67	30.959		
6,500.0	6,381.7	6,411.4	6,350.3	24.0	18.8	-138.70	-772.5	212.6	1,122.3	1,086.0	36.26	30.951		
6,600.0	6,479.7	6,509.7	6,447.6	24.3	19.1	-138.66	-786.4	215.2	1,140.3	1,103.4	36.85	30.943		
6,700.0	6,577.6	6,608.1	6,545.0	24.7	19.4	-138.62	-800.2	217.8	1,158.3	1,120.8	37.44	30.936		
6,800.0	6,675.6	6,706.5	6,642.4	25.1	19.7	-138.68	-814.0	220.4	1,176.0	1,138.0	38.04	30.913		
6,900.0	6,774.2	6,805.2	6,740.1	25.4	20.0	-138.74	-827.9	223.0	1,191.6	1,153.0	38.64	30.841		
7,000.0	6,873.3	6,904.2	6,838.1	25.7	20.3	-138.67	-841.8	225.6	1,204.7	1,165.5	39.21	30.721		
7,100.0	6,972.8	7,011.5	6,944.4	25.9	20.6	-138.49	-855.5	228.2	1,214.8	1,175.1	39.74	30.566 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Sec 6 T6S R96W (F06 696) - Chevron 6-22D - DD - Plan #3													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	36.61	108.5	80.6	135.2					
100.0	100.0	100.0	100.0	0.1	0.1	36.61	108.5	80.6	135.2	134.9	0.27	496.643		
200.0	200.0	200.0	200.0	0.3	0.3	36.61	108.5	80.6	135.2	134.6	0.62	217.630		
300.0	300.0	300.0	300.0	0.5	0.5	36.61	108.5	80.6	135.2	134.3	0.97	139.346 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	166.75	108.5	80.6	136.9	135.6	1.32	103.797		
500.0	499.8	499.8	499.8	0.9	0.8	167.21	108.5	80.6	142.0	140.4	1.67	85.191		
600.0	599.5	599.5	599.5	1.1	1.0	167.91	108.5	80.6	150.5	148.5	2.01	74.742		
700.0	698.7	698.7	698.7	1.3	1.2	168.76	108.5	80.6	162.5	160.1	2.36	68.864		
800.0	797.5	797.5	797.5	1.6	1.4	169.69	108.5	80.6	177.8	175.1	2.70	65.822		
900.0	895.6	895.6	895.6	2.0	1.5	170.63	108.5	80.6	196.6	193.5	3.04	64.600		
1,000.0	993.6	993.6	993.6	2.4	1.7	171.50	108.5	80.6	216.4	213.0	3.39	63.829		
1,100.0	1,091.6	1,086.1	1,086.1	2.7	1.9	172.39	108.7	81.9	237.3	233.6	3.73	63.676 SF		
1,200.0	1,189.5	1,177.1	1,177.0	3.1	2.0	173.55	109.2	86.1	260.7	256.7	4.06	64.220		
1,300.0	1,287.5	1,266.8	1,266.4	3.5	2.2	174.88	110.1	93.0	286.6	282.2	4.39	65.275		
1,400.0	1,385.5	1,360.1	1,359.2	3.9	2.4	176.30	111.3	102.4	314.5	309.8	4.73	66.508		
1,500.0	1,483.4	1,455.8	1,454.4	4.3	2.6	177.54	112.5	112.2	342.7	337.7	5.07	67.547		
1,600.0	1,581.4	1,551.5	1,549.6	4.7	2.8	178.60	113.7	122.1	371.1	365.7	5.42	68.448		
1,700.0	1,679.4	1,647.2	1,644.7	5.0	3.0	179.50	114.9	131.9	399.5	393.7	5.77	69.236		
1,800.0	1,777.3	1,742.8	1,739.9	5.4	3.2	-179.71	116.2	141.7	428.0	421.9	6.12	69.929		
1,900.0	1,875.3	1,838.5	1,835.1	5.8	3.4	-179.03	117.4	151.6	456.6	450.2	6.47	70.544		
2,000.0	1,973.3	1,934.2	1,930.3	6.2	3.7	-178.42	118.6	161.4	485.3	478.4	6.83	71.092		
2,100.0	2,071.2	2,029.9	2,025.4	6.6	3.9	-177.88	119.8	171.2	513.9	506.8	7.18	71.583		
2,200.0	2,169.2	2,125.6	2,120.6	7.0	4.1	-177.40	121.1	181.1	542.7	535.1	7.53	72.026		
2,300.0	2,267.2	2,221.3	2,215.8	7.4	4.3	-176.97	122.3	190.9	571.4	563.5	7.89	72.426		
2,400.0	2,365.1	2,317.0	2,311.0	7.8	4.6	-176.57	123.5	200.8	600.2	592.0	8.25	72.791		
2,500.0	2,463.1	2,412.7	2,406.2	8.2	4.8	-176.22	124.7	210.6	629.0	620.4	8.60	73.123		
2,600.0	2,561.0	2,508.4	2,501.3	8.6	5.0	-175.89	126.0	220.4	657.8	648.9	8.96	73.428		
2,700.0	2,659.0	2,604.1	2,596.5	9.0	5.3	-175.60	127.2	230.3	686.7	677.4	9.32	73.708		
2,800.0	2,757.0	2,699.8	2,691.7	9.4	5.5	-175.32	128.4	240.1	715.5	705.9	9.67	73.966		
2,900.0	2,854.9	2,795.5	2,786.9	9.8	5.7	-175.07	129.6	249.9	744.4	734.4	10.03	74.204		
3,000.0	2,952.9	2,891.2	2,882.0	10.1	6.0	-174.84	130.9	259.8	773.3	762.9	10.39	74.425		
3,100.0	3,050.9	2,986.8	2,977.2	10.5	6.2	-174.62	132.1	269.6	802.2	791.4	10.75	74.631		
3,200.0	3,148.8	3,082.5	3,072.4	10.9	6.4	-174.42	133.3	279.4	831.1	820.0	11.11	74.823		
3,300.0	3,246.8	3,183.5	3,172.8	11.3	6.7	-174.22	134.6	289.8	859.9	848.5	11.48	74.937		
3,400.0	3,344.8	3,315.8	3,304.8	11.7	7.0	-174.10	135.8	299.4	886.3	874.4	11.89	74.552		
3,500.0	3,442.7	3,451.0	3,439.9	12.1	7.2	-174.17	136.2	303.1	908.6	896.3	12.29	73.920		
3,600.0	3,540.7	3,555.6	3,544.5	12.5	7.3	-174.31	136.1	302.9	928.4	915.8	12.64	73.440		
3,700.0	3,638.7	3,655.6	3,644.5	12.9	7.5	-174.43	135.9	302.4	947.9	934.9	12.98	73.000		
3,800.0	3,736.6	3,753.7	3,742.5	13.3	7.6	-174.55	135.6	301.9	967.2	953.9	13.32	72.595		
3,900.0	3,834.6	3,851.7	3,840.6	13.7	7.7	-174.66	135.3	301.4	986.6	973.0	13.66	72.210		
4,000.0	3,932.6	3,949.8	3,938.7	14.1	7.9	-174.77	135.0	300.9	1,006.0	992.0	14.00	71.844		
4,100.0	4,030.5	4,047.9	4,036.8	14.5	8.0	-174.88	134.7	300.3	1,025.4	1,011.1	14.34	71.494		
4,200.0	4,128.5	4,146.0	4,134.9	14.9	8.2	-174.98	134.4	299.8	1,044.8	1,030.1	14.68	71.161		
4,300.0	4,226.5	4,244.1	4,233.0	15.3	8.3	-175.08	134.1	299.3	1,064.2	1,049.2	15.02	70.842		
4,400.0	4,324.4	4,342.2	4,331.0	15.7	8.5	-175.17	133.8	298.8	1,083.6	1,068.2	15.36	70.537		
4,500.0	4,422.4	4,440.2	4,429.1	16.1	8.6	-175.26	133.5	298.3	1,103.0	1,087.3	15.70	70.245		
4,600.0	4,520.3	4,538.3	4,527.2	16.5	8.8	-175.35	133.2	297.7	1,122.4	1,106.4	16.04	69.965		
4,700.0	4,618.3	4,636.4	4,625.3	16.8	8.9	-175.43	132.9	297.2	1,141.8	1,125.4	16.38	69.697		
4,800.0	4,716.3	4,734.5	4,723.4	17.2	9.1	-175.52	132.6	296.7	1,161.2	1,144.5	16.72	69.439		
4,900.0	4,814.2	4,832.6	4,821.5	17.6	9.2	-175.59	132.3	296.2	1,180.7	1,163.6	17.06	69.191		
5,000.0	4,912.2	4,930.7	4,919.5	18.0	9.4	-175.67	132.0	295.7	1,200.1	1,182.7	17.40	68.953		
5,100.0	5,010.2	5,028.8	5,017.6	18.4	9.5	-175.75	131.6	295.1	1,219.5	1,201.7	17.74	68.724		

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

## Cathedral Energy Services

### Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		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	36.73	131.5	98.1	164.1					
100.0	100.0	100.0	100.0	0.1	0.1	36.73	131.5	98.1	164.1	163.8	0.27	602.576		
200.0	200.0	200.0	200.0	0.3	0.3	36.73	131.5	98.1	164.1	163.4	0.62	264.050 CC, ES		
300.0	300.0	294.6	294.6	0.5	0.5	36.84	132.5	99.3	165.7	164.7	0.96	171.911		
400.0	400.0	389.0	388.8	0.7	0.7	167.21	135.7	102.7	172.2	170.9	1.30	132.405		
500.0	499.8	487.3	486.9	0.9	0.9	167.91	140.4	107.9	184.3	182.7	1.65	111.986		
600.0	599.5	586.0	585.4	1.1	1.1	168.72	145.1	113.1	199.8	197.8	1.99	100.411		
700.0	698.7	684.1	683.3	1.3	1.3	169.56	149.8	118.3	218.8	216.5	2.33	93.837		
800.0	797.5	781.5	780.4	1.6	1.5	170.40	154.5	123.4	241.1	238.5	2.67	90.349		
900.0	895.6	878.1	876.7	2.0	1.7	171.20	159.1	128.5	266.8	263.8	3.00	88.812		
1,000.0	993.6	974.4	972.8	2.4	1.9	171.96	163.7	133.6	293.6	290.2	3.35	87.718		
1,100.0	1,091.6	1,070.7	1,068.8	2.7	2.1	172.58	168.3	138.7	320.4	316.7	3.69	86.855		
1,200.0	1,189.5	1,167.0	1,164.8	3.1	2.3	173.11	172.9	143.8	347.2	343.2	4.03	86.159		
1,300.0	1,287.5	1,263.2	1,260.9	3.5	2.5	173.56	177.5	148.9	374.1	369.7	4.37	85.585		
1,400.0	1,385.5	1,359.5	1,356.9	3.9	2.7	173.96	182.2	154.0	401.0	396.3	4.71	85.105		
1,500.0	1,483.4	1,455.8	1,453.0	4.3	2.9	174.30	186.8	159.0	427.9	422.8	5.05	84.698		
1,600.0	1,581.4	1,552.1	1,549.0	4.7	3.1	174.60	191.4	164.1	454.8	449.4	5.39	84.347		
1,700.0	1,679.4	1,648.4	1,645.0	5.0	3.3	174.87	196.0	169.2	481.7	476.0	5.73	84.042		
1,800.0	1,777.3	1,744.7	1,741.1	5.4	3.5	175.11	200.6	174.3	508.6	502.6	6.07	83.775		
1,900.0	1,875.3	1,841.0	1,837.1	5.8	3.7	175.33	205.2	179.4	535.6	529.2	6.41	83.538		
2,000.0	1,973.3	1,937.2	1,933.2	6.2	3.9	175.52	209.8	184.5	562.5	555.8	6.75	83.328		
2,100.0	2,071.2	2,033.5	2,029.2	6.6	4.2	175.70	214.5	189.6	589.5	582.4	7.09	83.138		
2,200.0	2,169.2	2,129.8	2,125.3	7.0	4.4	175.86	219.1	194.6	616.4	609.0	7.43	82.968		
2,300.0	2,267.2	2,226.1	2,221.3	7.4	4.6	176.01	223.7	199.7	643.4	635.6	7.77	82.813		
2,400.0	2,365.1	2,322.4	2,317.3	7.8	4.8	176.15	228.3	204.8	670.3	662.2	8.11	82.671		
2,500.0	2,463.1	2,418.7	2,413.4	8.2	5.0	176.28	232.9	209.9	697.3	688.8	8.45	82.542		
2,600.0	2,561.0	2,515.0	2,509.4	8.6	5.2	176.39	237.5	215.0	724.2	715.5	8.79	82.423		
2,700.0	2,659.0	2,611.2	2,605.5	9.0	5.4	176.50	242.1	220.1	751.2	742.1	9.13	82.314		
2,800.0	2,757.0	2,707.5	2,701.5	9.4	5.6	176.60	246.7	225.1	778.2	768.7	9.47	82.213		
2,900.0	2,854.9	2,803.8	2,797.5	9.8	5.8	176.70	251.4	230.2	805.2	795.4	9.80	82.118		
3,000.0	2,952.9	2,900.1	2,893.6	10.1	6.0	176.78	256.0	235.3	832.1	822.0	10.14	82.031		
3,100.0	3,050.9	2,996.4	2,989.6	10.5	6.2	176.87	260.6	240.4	859.1	848.6	10.48	81.949		
3,200.0	3,148.8	3,092.7	3,085.7	10.9	6.4	176.94	265.2	245.5	886.1	875.3	10.82	81.873		
3,300.0	3,246.8	3,189.0	3,181.7	11.3	6.6	177.02	269.8	250.6	913.1	901.9	11.16	81.801		
3,400.0	3,344.8	3,285.2	3,277.7	11.7	6.8	177.09	274.4	255.7	940.0	928.5	11.50	81.734		
3,500.0	3,442.7	3,381.5	3,373.8	12.1	7.0	177.15	279.0	260.7	967.0	955.2	11.84	81.670		
3,600.0	3,540.7	3,477.8	3,469.8	12.5	7.2	177.21	283.7	265.8	994.0	981.8	12.18	81.611		
3,700.0	3,638.7	3,574.1	3,565.9	12.9	7.5	177.27	288.3	270.9	1,021.0	1,008.5	12.52	81.554		
3,800.0	3,736.6	3,670.4	3,661.9	13.3	7.7	177.32	292.9	276.0	1,048.0	1,035.1	12.86	81.501		
3,900.0	3,834.6	3,766.7	3,757.9	13.7	7.9	177.38	297.5	281.1	1,075.0	1,061.8	13.20	81.450		
4,000.0	3,932.6	3,863.0	3,854.0	14.1	8.1	177.43	302.1	286.2	1,101.9	1,088.4	13.54	81.402		
4,100.0	4,030.5	3,959.2	3,950.0	14.5	8.3	177.47	306.7	291.3	1,128.9	1,115.1	13.88	81.357		
4,200.0	4,128.5	4,055.5	4,046.1	14.9	8.5	177.52	311.3	296.3	1,155.9	1,141.7	14.22	81.313		
4,300.0	4,226.5	4,151.8	4,142.1	15.3	8.7	177.56	316.0	301.4	1,182.9	1,168.4	14.55	81.272		
4,400.0	4,324.4	4,248.1	4,238.1	15.7	8.9	177.60	320.6	306.5	1,209.9	1,195.0	14.89	81.232 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 139-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	36.72	119.5	89.1	149.0					
100.0	100.0	98.5	98.5	0.1	0.1	36.70	119.9	89.4	149.5	149.2	0.28	530.985		
200.0	200.0	196.4	196.3	0.3	0.3	36.62	121.3	90.1	151.1	150.5	0.62	244.747		
300.0	300.0	293.5	293.4	0.5	0.5	36.24	124.5	91.2	154.5	153.5	0.96	160.082		
400.0	400.0	388.3	388.1	0.7	0.7	165.40	130.3	92.3	161.8	160.5	1.31	123.875		
500.0	499.8	482.0	481.3	0.9	0.9	164.43	139.4	93.9	175.8	174.2	1.65	106.360		
600.0	599.5	579.3	577.8	1.1	1.2	163.31	151.5	95.4	195.2	193.2	2.02	96.829		
700.0	698.7	676.0	673.6	1.3	1.5	162.00	164.7	94.9	217.9	215.6	2.39	91.124		
800.0	797.5	771.4	768.0	1.6	1.7	160.99	178.5	94.0	244.4	241.6	2.77	88.340		
900.0	895.6	863.9	859.5	2.0	2.0	160.71	191.7	94.7	274.6	271.5	3.13	87.643		
1,000.0	993.6	958.8	953.4	2.4	2.3	160.79	205.5	96.2	306.4	302.9	3.52	86.941		
1,100.0	1,091.6	1,050.1	1,043.6	2.7	2.6	160.81	219.1	97.6	338.6	334.7	3.91	86.706		
1,200.0	1,189.5	1,142.5	1,134.9	3.1	2.9	160.83	233.6	99.5	371.6	367.3	4.30	86.474		
1,300.0	1,287.5	1,237.8	1,229.0	3.5	3.2	160.78	249.0	101.2	404.8	400.1	4.69	86.300		
1,400.0	1,385.5	1,339.4	1,329.4	3.9	3.5	160.84	264.1	103.0	437.1	432.0	5.10	85.745		
1,500.0	1,483.4	1,434.2	1,423.2	4.3	3.8	160.89	277.5	104.4	468.5	463.1	5.49	85.368		
1,600.0	1,581.4	1,528.4	1,516.5	4.7	4.1	161.00	290.7	106.3	500.1	494.2	5.88	85.112		
1,700.0	1,679.4	1,626.3	1,613.5	5.0	4.4	161.09	304.2	108.0	531.5	525.2	6.27	84.714		
1,800.0	1,777.3	1,725.9	1,712.2	5.4	4.7	161.15	317.5	109.2	562.2	555.5	6.68	84.210		
1,900.0	1,875.3	1,821.1	1,806.6	5.8	4.9	161.22	329.8	110.4	592.5	585.4	7.07	83.846		
2,000.0	1,973.3	1,917.4	1,902.1	6.2	5.2	161.32	341.9	111.8	622.7	615.3	7.46	83.528		
2,100.0	2,071.2	2,010.2	1,994.1	6.6	5.5	161.47	353.3	113.9	653.1	645.2	7.83	83.412		
2,200.0	2,169.2	2,103.6	2,086.8	7.0	5.7	161.64	365.0	116.4	683.8	675.5	8.21	83.315		
2,300.0	2,267.2	2,203.2	2,185.6	7.4	6.0	161.79	377.3	118.7	714.2	705.7	8.60	83.088		
2,400.0	2,365.1	2,298.0	2,279.7	7.8	6.3	161.90	388.8	120.6	744.3	735.3	8.98	82.889		
2,500.0	2,463.1	2,387.0	2,367.9	8.2	6.5	162.00	399.9	122.6	774.8	765.5	9.35	82.875		
2,600.0	2,561.0	2,476.5	2,456.6	8.6	6.8	162.06	411.9	124.7	806.2	796.5	9.73	82.863		
2,700.0	2,659.0	2,560.2	2,539.4	9.0	7.1	162.05	424.4	126.3	838.5	828.4	10.10	82.989		
2,800.0	2,757.0	2,655.9	2,633.9	9.4	7.4	162.02	439.4	128.4	871.6	861.1	10.50	83.012		
2,900.0	2,854.9	2,756.0	2,732.8	9.8	7.7	162.00	454.5	130.4	904.1	893.2	10.91	82.885		
3,000.0	2,952.9	2,851.7	2,827.4	10.1	8.0	161.93	469.1	131.5	936.3	925.0	11.32	82.743		
3,100.0	3,050.9	2,947.6	2,922.1	10.5	8.3	161.84	483.9	132.0	968.4	956.6	11.73	82.579		
3,200.0	3,148.8	3,057.0	3,030.3	10.9	8.6	161.74	500.1	132.3	999.7	987.6	12.16	82.191 SF		
3,300.0	3,246.8	3,139.1	3,111.6	11.3	8.9	161.70	511.9	132.8	1,030.9	1,018.4	12.54	82.223		
3,400.0	3,344.8	3,212.9	3,184.5	11.7	9.1	161.69	523.2	134.2	1,063.6	1,050.7	12.89	82.522		
3,500.0	3,442.7	3,306.6	3,276.9	12.1	9.4	161.71	538.4	137.4	1,097.8	1,084.5	13.28	82.691		
3,600.0	3,540.7	3,425.9	3,394.7	12.5	9.8	161.73	556.4	140.3	1,130.5	1,116.8	13.72	82.400		
3,700.0	3,638.7	3,502.3	3,470.3	12.9	10.1	161.70	568.0	141.4	1,162.8	1,148.7	14.08	82.556		
3,800.0	3,736.6	3,596.5	3,563.1	13.3	10.4	161.67	583.3	143.3	1,196.3	1,181.8	14.48	82.614		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Sec 6 T6S R96W (F06 696) - Chevron 6-32D - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-143.98	-12.0	-8.7	14.9					
100.0	100.0	100.0	100.0	0.1	0.1	-143.98	-12.0	-8.7	14.9	14.6	0.27	54.586		
200.0	200.0	200.0	200.0	0.3	0.3	-143.98	-12.0	-8.7	14.9	14.2	0.62	23.920 CC, ES		
300.0	300.0	299.4	299.4	0.5	0.5	-143.57	-13.3	-9.8	16.6	15.6	0.97	17.074		
400.0	400.0	398.7	398.6	0.7	0.7	-13.85	-17.3	-13.2	20.1	18.8	1.32	15.252		
500.0	499.8	497.9	497.4	0.9	0.9	-15.48	-23.9	-18.7	23.7	22.0	1.67	14.207		
600.0	599.5	597.0	595.7	1.1	1.2	-17.94	-33.1	-26.4	27.4	25.3	2.02	13.547		
700.0	698.7	695.9	693.4	1.3	1.5	-20.88	-44.9	-36.2	31.2	28.8	2.39	13.077		
800.0	797.5	794.7	790.4	1.6	1.8	-24.11	-59.2	-48.2	35.3	32.5	2.78	12.674		
900.0	895.6	893.6	886.8	2.0	2.3	-27.46	-76.1	-62.3	39.6	36.4	3.23	12.260		
1,000.0	993.6	993.5	984.0	2.4	2.7	-30.42	-93.9	-77.2	44.2	40.4	3.73	11.831		
1,100.0	1,091.6	1,093.3	1,081.1	2.7	3.1	-32.83	-111.7	-92.1	48.8	44.5	4.27	11.436		
1,200.0	1,189.5	1,193.2	1,178.2	3.1	3.5	-34.81	-129.5	-107.0	53.5	48.7	4.83	11.083		
1,300.0	1,287.5	1,293.1	1,275.4	3.5	4.0	-36.48	-147.4	-121.9	58.3	52.9	5.41	10.771		
1,400.0	1,385.5	1,393.0	1,372.5	3.9	4.4	-37.89	-165.2	-136.8	63.1	57.1	6.01	10.499		
1,500.0	1,483.4	1,492.8	1,469.6	4.3	4.9	-39.10	-183.0	-151.7	67.9	61.3	6.62	10.261		
1,600.0	1,581.4	1,592.7	1,566.8	4.7	5.3	-40.15	-200.9	-166.6	72.8	65.5	7.24	10.054		
1,700.0	1,679.4	1,692.6	1,663.9	5.0	5.7	-41.07	-218.7	-181.5	77.6	69.8	7.86	9.871		
1,800.0	1,777.3	1,792.4	1,761.0	5.4	6.2	-41.88	-236.5	-196.4	82.5	74.0	8.50	9.711		
1,900.0	1,875.3	1,892.3	1,858.2	5.8	6.6	-42.60	-254.3	-211.3	87.4	78.3	9.14	9.569		
2,000.0	1,973.3	1,992.2	1,955.3	6.2	7.1	-43.24	-272.2	-226.2	92.4	82.6	9.78	9.442		
2,100.0	2,071.2	2,092.1	2,052.4	6.6	7.5	-43.82	-290.0	-241.1	97.3	86.9	10.43	9.329		
2,200.0	2,169.2	2,191.9	2,149.6	7.0	8.0	-44.34	-307.8	-256.0	102.2	91.2	11.08	9.228		
2,300.0	2,267.2	2,291.8	2,246.7	7.4	8.4	-44.81	-325.6	-270.9	107.2	95.4	11.73	9.136		
2,400.0	2,365.1	2,391.7	2,343.8	7.8	8.8	-45.24	-343.5	-285.9	112.1	99.7	12.39	9.053		
2,500.0	2,463.1	2,491.6	2,441.0	8.2	9.3	-45.64	-361.3	-300.8	117.1	104.1	13.04	8.978		
2,600.0	2,561.0	2,591.4	2,538.1	8.6	9.7	-46.00	-379.1	-315.7	122.1	108.4	13.70	8.909		
2,700.0	2,659.0	2,691.3	2,635.2	9.0	10.2	-46.33	-396.9	-330.6	127.0	112.7	14.36	8.846		
2,800.0	2,757.0	2,791.2	2,732.4	9.4	10.6	-46.64	-414.8	-345.5	132.0	117.0	15.02	8.788		
2,900.0	2,854.9	2,891.1	2,829.5	9.8	11.1	-46.93	-432.6	-360.4	137.0	121.3	15.68	8.734		
3,000.0	2,952.9	2,990.9	2,926.6	10.1	11.5	-47.20	-450.4	-375.3	142.0	125.6	16.35	8.685		
3,100.0	3,050.9	3,090.8	3,023.8	10.5	12.0	-47.45	-468.3	-390.2	146.9	129.9	17.01	8.639		
3,200.0	3,148.8	3,190.7	3,120.9	10.9	12.4	-47.68	-486.1	-405.1	151.9	134.3	17.68	8.596		
3,300.0	3,246.8	3,290.6	3,218.0	11.3	12.8	-47.90	-503.9	-420.0	156.9	138.6	18.34	8.556		
3,400.0	3,344.8	3,390.4	3,315.2	11.7	13.3	-48.10	-521.7	-434.9	161.9	142.9	19.01	8.519		
3,500.0	3,442.7	3,490.3	3,412.3	12.1	13.7	-48.29	-539.6	-449.8	166.9	147.2	19.67	8.484		
3,600.0	3,540.7	3,590.2	3,509.4	12.5	14.2	-48.47	-557.4	-464.7	171.9	151.6	20.34	8.452		
3,700.0	3,638.7	3,690.0	3,606.6	12.9	14.6	-48.64	-575.2	-479.6	176.9	155.9	21.01	8.421		
3,800.0	3,736.6	3,789.9	3,703.7	13.3	15.1	-48.80	-593.0	-494.5	181.9	160.2	21.67	8.392		
3,900.0	3,834.6	3,889.8	3,800.8	13.7	15.5	-48.96	-610.9	-509.4	186.9	164.6	22.34	8.365		
4,000.0	3,932.6	3,989.7	3,898.0	14.1	16.0	-49.10	-628.7	-524.3	191.9	168.9	23.01	8.340		
4,100.0	4,030.5	4,089.5	3,995.1	14.5	16.4	-49.24	-646.5	-539.2	196.9	173.2	23.68	8.315		
4,200.0	4,128.5	4,189.4	4,092.2	14.9	16.8	-49.37	-664.3	-554.1	201.9	177.6	24.35	8.292		
4,300.0	4,226.5	4,289.3	4,189.4	15.3	17.3	-49.49	-682.2	-569.0	206.9	181.9	25.02	8.270		
4,400.0	4,324.4	4,389.2	4,286.5	15.7	17.7	-49.61	-700.0	-583.9	211.9	186.2	25.69	8.250		
4,500.0	4,422.4	4,489.0	4,383.6	16.1	18.2	-49.72	-717.8	-598.8	216.9	190.6	26.36	8.230		
4,600.0	4,520.3	4,588.9	4,480.8	16.5	18.6	-49.83	-735.7	-613.7	221.9	194.9	27.03	8.211		
4,700.0	4,618.3	4,688.8	4,577.9	16.8	19.1	-49.94	-753.5	-628.7	226.9	199.2	27.70	8.193		
4,800.0	4,716.3	4,788.7	4,675.0	17.2	19.5	-50.03	-771.3	-643.6	231.9	203.6	28.37	8.176		
4,900.0	4,814.2	4,888.5	4,772.2	17.6	20.0	-50.13	-789.1	-658.5	236.9	207.9	29.04	8.160		
5,000.0	4,912.2	4,988.4	4,869.3	18.0	20.4	-50.22	-807.0	-673.4	242.0	212.3	29.71	8.144		
5,100.0	5,010.2	5,088.3	4,966.4	18.4	20.9	-50.31	-824.8	-688.3	247.0	216.6	30.38	8.130		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design      Sec 6 T6S R96W (F06 696) - Chevron 6-32D - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program:    O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,200.0	5,108.1	5,188.2	5,063.6	18.8	21.3	-50.39	-842.6	-703.2	252.0	220.9	31.05	8.115		
5,300.0	5,206.1	5,288.0	5,160.7	19.2	21.7	-50.47	-860.4	-718.1	257.0	225.3	31.72	8.102		
5,400.0	5,304.1	5,387.9	5,257.8	19.6	22.2	-50.55	-878.3	-733.0	262.0	229.6	32.39	8.088		
5,500.0	5,402.0	5,487.8	5,355.0	20.0	22.6	-50.62	-896.1	-747.9	267.0	233.9	33.06	8.076		
5,600.0	5,500.0	5,587.7	5,452.1	20.4	23.1	-50.69	-913.9	-762.8	272.0	238.3	33.73	8.064		
5,700.0	5,598.0	5,687.5	5,549.2	20.8	23.5	-50.76	-931.8	-777.7	277.0	242.6	34.41	8.052		
5,800.0	5,695.9	5,787.4	5,646.4	21.2	24.0	-50.83	-949.6	-792.6	282.1	247.0	35.08	8.041		
5,900.0	5,793.9	5,887.3	5,743.5	21.6	24.4	-50.89	-967.4	-807.5	287.1	251.3	35.75	8.030		
6,000.0	5,891.9	5,987.1	5,840.6	22.0	24.9	-50.95	-985.2	-822.4	292.1	255.7	36.42	8.020		
6,100.0	5,989.8	6,087.0	5,937.8	22.4	25.3	-51.01	-1,003.1	-837.3	297.1	260.0	37.09	8.009		
6,200.0	6,087.8	6,186.9	6,034.9	22.8	25.8	-51.07	-1,020.9	-852.2	302.1	264.3	37.76	8.000		
6,300.0	6,185.8	6,286.8	6,132.0	23.2	26.2	-51.13	-1,038.7	-867.1	307.1	268.7	38.44	7.990		
6,400.0	6,283.7	6,386.6	6,229.2	23.6	26.6	-51.18	-1,056.5	-882.0	312.1	273.0	39.11	7.981		
6,500.0	6,381.7	6,486.5	6,326.3	24.0	27.1	-51.23	-1,074.4	-896.9	317.2	277.4	39.78	7.973		
6,600.0	6,479.7	6,586.4	6,423.4	24.3	27.5	-51.28	-1,092.2	-911.8	322.2	281.7	40.45	7.964		
6,700.0	6,577.6	6,686.3	6,520.6	24.7	28.0	-51.33	-1,110.0	-926.7	327.2	286.1	41.12	7.956		
6,800.0	6,675.6	6,794.4	6,626.1	25.1	28.4	-51.55	-1,128.1	-941.9	331.3	289.4	41.86	7.915		
6,900.0	6,774.2	6,903.9	6,733.7	25.4	28.8	-51.82	-1,143.3	-954.6	334.4	291.9	42.52	7.864		
7,000.0	6,873.3	7,013.4	6,842.1	25.7	29.1	-52.05	-1,155.4	-964.7	336.8	293.7	43.08	7.818		
7,100.0	6,972.8	7,122.9	6,951.1	25.9	29.3	-52.23	-1,164.3	-972.1	338.5	295.0	43.54	7.776		
7,200.0	7,072.6	7,232.6	7,060.4	26.1	29.5	-52.36	-1,169.9	-976.8	339.5	295.7	43.89	7.737		
7,300.0	7,172.5	7,342.2	7,170.0	26.2	29.6	-52.44	-1,172.4	-978.9	339.9	295.7	44.14	7.699		
7,394.6	7,267.1	7,438.9	7,266.7	26.3	29.7	-60.38	-1,172.6	-979.1	339.6	295.2	44.37	7.653		
7,400.0	7,272.5	7,444.2	7,272.0	26.3	29.7	-62.36	-1,172.6	-979.1	339.8	295.5	44.35	7.663		
7,500.0	7,372.5	7,543.5	7,371.3	26.4	29.7	-62.36	-1,172.8	-979.6	339.9	295.3	44.57	7.625		
7,600.0	7,472.5	7,642.9	7,470.6	26.5	29.8	-62.35	-1,173.3	-980.4	339.9	295.1	44.81	7.585		
7,700.0	7,572.5	7,742.3	7,570.1	26.6	29.9	-62.35	-1,174.0	-981.6	339.9	294.8	45.05	7.545		
7,800.0	7,672.5	7,842.3	7,670.0	26.7	30.0	-62.35	-1,174.8	-982.9	339.9	294.6	45.30	7.503		
7,900.0	7,772.5	7,942.3	7,770.0	26.8	30.1	-62.35	-1,175.6	-984.3	339.9	294.3	45.55	7.462		
8,000.0	7,872.5	8,042.3	7,870.0	26.9	30.2	-62.34	-1,176.4	-985.6	339.9	294.1	45.80	7.422		
8,100.0	7,972.5	8,142.3	7,970.0	27.0	30.3	-62.34	-1,177.1	-987.0	339.9	293.8	46.05	7.381		
8,200.0	8,072.4	8,242.3	8,070.0	27.1	30.5	-62.34	-1,177.9	-988.3	339.9	293.6	46.30	7.341		
8,300.0	8,172.4	8,342.3	8,170.0	27.3	30.6	-62.34	-1,178.7	-989.7	339.9	293.3	46.55	7.301		
8,400.0	8,272.4	8,442.3	8,270.0	27.4	30.7	-62.34	-1,179.5	-991.0	339.9	293.1	46.81	7.261		
8,500.0	8,372.4	8,542.3	8,370.0	27.5	30.8	-62.34	-1,180.2	-992.4	339.9	292.8	47.06	7.221		
8,600.0	8,472.4	8,642.3	8,469.9	27.6	30.9	-62.34	-1,181.0	-993.7	339.9	292.5	47.32	7.182		
8,700.0	8,572.4	8,742.3	8,569.9	27.7	31.0	-62.34	-1,181.8	-995.1	339.9	292.3	47.58	7.143		
8,800.0	8,672.4	8,842.3	8,669.9	27.8	31.1	-62.34	-1,182.6	-996.4	339.9	292.0	47.84	7.104		
8,900.0	8,772.4	8,942.3	8,769.9	28.0	31.2	-62.34	-1,183.3	-997.8	339.9	291.8	48.10	7.066		
9,000.0	8,872.3	9,042.3	8,869.9	28.1	31.3	-62.34	-1,184.1	-999.1	339.9	291.5	48.36	7.027		
9,100.0	8,972.3	9,142.3	8,969.9	28.2	31.4	-62.34	-1,184.9	-1,000.5	339.9	291.2	48.63	6.989		
9,200.0	9,072.3	9,242.3	9,069.9	28.3	31.5	-62.34	-1,185.7	-1,001.8	339.9	291.0	48.89	6.951		
9,300.0	9,172.3	9,342.3	9,169.9	28.4	31.6	-62.34	-1,186.5	-1,003.2	339.9	290.7	49.16	6.914		
9,400.0	9,272.3	9,442.3	9,269.8	28.6	31.8	-62.34	-1,187.2	-1,004.5	339.9	290.4	49.42	6.876		
9,500.0	9,372.3	9,542.3	9,369.8	28.7	31.9	-62.34	-1,188.0	-1,005.9	339.9	290.2	49.69	6.839		
9,600.0	9,472.3	9,642.3	9,469.8	28.8	32.0	-62.33	-1,188.8	-1,007.2	339.9	289.9	49.96	6.802		
9,700.0	9,572.3	9,742.3	9,569.8	28.9	32.1	-62.33	-1,189.6	-1,008.6	339.9	289.6	50.23	6.766		
9,800.0	9,672.2	9,842.3	9,669.8	29.0	32.2	-62.33	-1,190.3	-1,009.9	339.9	289.3	50.50	6.730		
9,900.0	9,772.2	9,942.3	9,769.8	29.2	32.3	-62.33	-1,191.1	-1,011.3	339.8	289.1	50.77	6.693		
10,000.0	9,872.2	10,042.3	9,869.8	29.3	32.4	-62.33	-1,191.9	-1,012.6	339.8	288.8	51.05	6.658		
10,060.1	9,932.4	10,102.4	9,929.9	29.4	32.5	-62.33	-1,192.4	-1,013.4	339.8	288.6	51.21	6.636		
10,086.8	9,959.0	10,121.5	9,949.0	29.4	32.5	-62.33	-1,192.5	-1,013.7	339.9	288.7	51.27	6.630 SF		

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

## Cathedral Energy Services

### Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	36.89	12.0	9.0	15.0					
100.0	100.0	100.0	100.0	0.1	0.1	36.89	12.0	9.0	15.0	14.8	0.27	55.201		
200.0	200.0	200.0	200.0	0.3	0.3	36.89	12.0	9.0	15.0	14.4	0.62	24.189		
300.0	300.0	300.0	300.0	0.5	0.5	36.89	12.0	9.0	15.0	14.1	0.97	15.488 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	168.22	12.0	9.0	16.7	15.4	1.32	12.686		
500.0	499.8	499.8	499.8	0.9	0.8	171.00	12.0	9.0	21.9	20.2	1.67	13.131		
600.0	599.5	600.4	600.4	1.1	1.0	172.49	11.2	7.5	28.9	26.9	2.01	14.333		
700.0	698.7	701.3	701.1	1.3	1.2	172.27	8.7	2.8	36.0	33.6	2.36	15.235		
800.0	797.5	802.3	801.7	1.6	1.4	171.20	4.4	-5.0	43.3	40.6	2.72	15.930		
900.0	895.6	903.6	902.2	2.0	1.7	169.63	-1.5	-15.9	50.6	47.5	3.08	16.421		
1,000.0	993.6	1,005.2	1,002.5	2.4	2.0	167.26	-9.1	-30.0	55.8	52.3	3.48	16.031		
1,100.0	1,091.6	1,105.9	1,101.5	2.7	2.3	164.03	-18.1	-46.6	58.4	54.5	3.92	14.899		
1,200.0	1,189.5	1,205.8	1,199.6	3.1	2.6	160.95	-27.2	-63.4	60.9	56.5	4.40	13.848		
1,300.0	1,287.5	1,305.7	1,297.6	3.5	3.0	158.11	-36.3	-80.1	63.6	58.7	4.92	12.935		
1,400.0	1,385.5	1,405.6	1,395.7	3.9	3.3	155.51	-45.3	-96.9	66.4	60.9	5.47	12.142		
1,500.0	1,483.4	1,505.5	1,493.8	4.3	3.7	153.12	-54.4	-113.6	69.3	63.2	6.05	11.456		
1,600.0	1,581.4	1,605.5	1,591.9	4.7	4.0	150.93	-63.5	-130.4	72.3	65.7	6.66	10.861		
1,700.0	1,679.4	1,705.4	1,690.0	5.0	4.4	148.92	-72.5	-147.1	75.5	68.2	7.29	10.346		
1,800.0	1,777.3	1,805.3	1,788.1	5.4	4.8	147.07	-81.6	-163.9	78.7	70.7	7.95	9.899		
1,900.0	1,875.3	1,905.2	1,886.1	5.8	5.2	145.37	-90.7	-180.6	82.0	73.3	8.62	9.510		
2,000.0	1,973.3	2,005.1	1,984.2	6.2	5.5	143.80	-99.8	-197.4	85.3	76.0	9.30	9.171		
2,100.0	2,071.2	2,105.0	2,082.3	6.6	5.9	142.35	-108.8	-214.1	88.7	78.7	10.00	8.874		
2,200.0	2,169.2	2,205.0	2,180.4	7.0	6.3	141.00	-117.9	-230.8	92.2	81.5	10.70	8.613		
2,300.0	2,267.2	2,304.9	2,278.5	7.4	6.6	139.76	-127.0	-247.6	95.7	84.3	11.42	8.382		
2,400.0	2,365.1	2,404.8	2,376.6	7.8	7.0	138.60	-136.0	-264.3	99.3	87.1	12.14	8.177		
2,500.0	2,463.1	2,504.7	2,474.7	8.2	7.4	137.53	-145.1	-281.1	102.9	90.0	12.87	7.995		
2,600.0	2,561.0	2,604.6	2,572.7	8.6	7.8	136.52	-154.2	-297.8	106.5	92.9	13.60	7.831		
2,700.0	2,659.0	2,704.5	2,670.8	9.0	8.1	135.59	-163.3	-314.6	110.2	95.8	14.33	7.685		
2,800.0	2,757.0	2,804.5	2,768.9	9.4	8.5	134.71	-172.3	-331.3	113.8	98.8	15.07	7.553		
2,900.0	2,854.9	2,904.4	2,867.0	9.8	8.9	133.89	-181.4	-348.1	117.5	101.7	15.81	7.434		
3,000.0	2,952.9	3,004.3	2,965.1	10.1	9.3	133.12	-190.5	-364.8	121.3	104.7	16.56	7.325		
3,100.0	3,050.9	3,104.2	3,063.2	10.5	9.7	132.40	-199.5	-381.6	125.0	107.7	17.30	7.227		
3,200.0	3,148.8	3,204.1	3,161.3	10.9	10.0	131.72	-208.6	-398.3	128.8	110.8	18.05	7.137		
3,300.0	3,246.8	3,304.0	3,259.3	11.3	10.4	131.07	-217.7	-415.1	132.6	113.8	18.80	7.054		
3,400.0	3,344.8	3,404.0	3,357.4	11.7	10.8	130.47	-226.7	-431.8	136.4	116.9	19.55	6.978		
3,500.0	3,442.7	3,503.9	3,455.5	12.1	11.2	129.89	-235.8	-448.6	140.2	119.9	20.30	6.908		
3,600.0	3,540.7	3,603.8	3,553.6	12.5	11.5	129.35	-244.9	-465.3	144.1	123.0	21.05	6.844		
3,700.0	3,638.7	3,703.7	3,651.7	12.9	11.9	128.83	-254.0	-482.1	147.9	126.1	21.80	6.784		
3,800.0	3,736.6	3,803.6	3,749.8	13.3	12.3	128.34	-263.0	-498.8	151.8	129.2	22.55	6.729		
3,900.0	3,834.6	3,903.6	3,847.9	13.7	12.7	127.88	-272.1	-515.6	155.6	132.3	23.31	6.677		
4,000.0	3,932.6	4,003.5	3,945.9	14.1	13.1	127.44	-281.2	-532.3	159.5	135.4	24.06	6.629		
4,100.0	4,030.5	4,103.4	4,044.0	14.5	13.4	127.01	-290.2	-549.1	163.4	138.6	24.82	6.584		
4,200.0	4,128.5	4,203.3	4,142.1	14.9	13.8	126.61	-299.3	-565.8	167.3	141.7	25.57	6.542		
4,300.0	4,226.5	4,303.2	4,240.2	15.3	14.2	126.23	-308.4	-582.6	171.2	144.9	26.32	6.503		
4,400.0	4,324.4	4,403.1	4,338.3	15.7	14.6	125.86	-317.5	-599.3	175.1	148.0	27.08	6.466		
4,500.0	4,422.4	4,503.1	4,436.4	16.1	14.9	125.51	-326.5	-616.1	179.0	151.2	27.83	6.432		
4,600.0	4,520.3	4,603.0	4,534.4	16.5	15.3	125.18	-335.6	-632.8	182.9	154.4	28.59	6.399		
4,700.0	4,618.3	4,702.9	4,632.5	16.8	15.7	124.86	-344.7	-649.5	186.9	157.5	29.34	6.368		
4,800.0	4,716.3	4,802.8	4,730.6	17.2	16.1	124.55	-353.7	-666.3	190.8	160.7	30.10	6.339		
4,900.0	4,814.2	4,902.7	4,828.7	17.6	16.5	124.25	-362.8	-683.0	194.8	163.9	30.86	6.312		
5,000.0	4,912.2	5,002.6	4,926.8	18.0	16.8	123.97	-371.9	-699.8	198.7	167.1	31.61	6.286		
5,100.0	5,010.2	5,102.6	5,024.9	18.4	17.2	123.70	-381.0	-716.5	202.6	170.3	32.37	6.261		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: O-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor	
5,200.0	5,108.1	5,202.5	5,123.0	18.8	17.6	123.43	-390.0	-733.3	206.6	173.5	33.12	6.238	
5,300.0	5,206.1	5,302.4	5,221.0	19.2	18.0	123.18	-399.1	-750.0	210.6	176.7	33.88	6.216	
5,400.0	5,304.1	5,402.3	5,319.1	19.6	18.4	122.94	-408.2	-766.8	214.5	179.9	34.63	6.194	
5,500.0	5,402.0	5,502.2	5,417.2	20.0	18.7	122.70	-417.2	-783.5	218.5	183.1	35.39	6.174	
5,600.0	5,500.0	5,602.1	5,515.3	20.4	19.1	122.48	-426.3	-800.3	222.5	186.3	36.14	6.155	
5,700.0	5,598.0	5,702.1	5,613.4	20.8	19.5	122.26	-435.4	-817.0	226.4	189.5	36.90	6.137	
5,800.0	5,695.9	5,802.0	5,711.5	21.2	19.9	122.05	-444.4	-833.8	230.4	192.8	37.65	6.119	
5,900.0	5,793.9	5,901.9	5,809.6	21.6	20.2	121.84	-453.5	-850.5	234.4	196.0	38.41	6.103	
6,000.0	5,891.9	6,001.8	5,907.6	22.0	20.6	121.65	-462.6	-867.3	238.4	199.2	39.16	6.087	
6,100.0	5,989.8	6,101.7	6,005.7	22.4	21.0	121.46	-471.7	-884.0	242.4	202.4	39.92	6.071	
6,200.0	6,087.8	6,201.6	6,103.8	22.8	21.4	121.27	-480.7	-900.8	246.3	205.7	40.67	6.057	
6,300.0	6,185.8	6,301.6	6,201.9	23.2	21.8	121.10	-489.8	-917.5	250.3	208.9	41.43	6.043	
6,400.0	6,283.7	6,401.5	6,300.0	23.6	22.1	120.92	-498.9	-934.3	254.3	212.1	42.18	6.029	
6,500.0	6,381.7	6,501.4	6,398.1	24.0	22.5	120.76	-507.9	-951.0	258.3	215.4	42.94	6.016	
6,600.0	6,479.7	6,601.3	6,496.2	24.3	22.9	120.59	-517.0	-967.8	262.3	218.6	43.69	6.004	
6,700.0	6,577.6	6,701.2	6,594.2	24.7	23.3	120.44	-526.1	-984.5	266.3	221.9	44.45	5.992	
6,800.0	6,675.6	6,800.0	6,691.2	25.1	23.7	120.27	-535.0	-1,001.0	270.2	225.0	45.20	5.978	
6,900.0	6,774.2	6,897.6	6,787.4	25.4	24.0	120.07	-542.8	-1,015.4	273.3	227.5	45.85	5.962	
7,000.0	6,873.3	6,994.6	6,883.5	25.7	24.2	119.90	-549.0	-1,026.8	275.8	229.4	46.39	5.945	
7,100.0	6,972.8	7,091.6	6,980.0	25.9	24.4	119.76	-553.6	-1,035.3	277.6	230.8	46.83	5.928	
7,200.0	7,072.6	7,188.6	7,076.9	26.1	24.6	119.64	-556.7	-1,041.0	278.8	231.6	47.17	5.910	
7,300.0	7,172.5	7,285.7	7,173.9	26.2	24.7	119.55	-558.2	-1,043.8	279.3	231.9	47.40	5.891	
7,400.0	7,272.5	7,384.6	7,272.7	26.3	24.8	109.62	-558.4	-1,044.2	279.3	231.7	47.60	5.867	
7,500.0	7,372.5	7,485.0	7,373.1	26.4	24.9	109.63	-558.6	-1,044.6	279.3	231.5	47.81	5.842	
7,600.0	7,472.5	7,585.4	7,473.5	26.5	25.0	109.64	-559.1	-1,045.4	279.3	231.3	48.03	5.815	
7,700.0	7,572.5	7,685.8	7,573.9	26.6	25.1	109.64	-559.8	-1,046.5	279.3	231.0	48.26	5.787	
7,800.0	7,672.5	7,785.8	7,673.9	26.7	25.2	109.64	-560.5	-1,047.9	279.3	230.8	48.50	5.759	
7,900.0	7,772.5	7,885.8	7,773.9	26.8	25.3	109.64	-561.3	-1,049.2	279.3	230.6	48.74	5.731	
8,000.0	7,872.5	7,985.8	7,873.9	26.9	25.5	109.64	-562.1	-1,050.6	279.3	230.3	48.98	5.703	
8,100.0	7,972.5	8,085.8	7,973.9	27.0	25.6	109.64	-562.9	-1,051.9	279.3	230.1	49.22	5.675	
8,200.0	8,072.4	8,185.8	8,073.9	27.1	25.7	109.64	-563.6	-1,053.2	279.3	229.9	49.46	5.647	
8,300.0	8,172.4	8,285.8	8,173.9	27.3	25.8	109.64	-564.4	-1,054.6	279.3	229.6	49.71	5.619	
8,400.0	8,272.4	8,385.8	8,273.9	27.4	25.9	109.64	-565.2	-1,055.9	279.3	229.4	49.95	5.592	
8,500.0	8,372.4	8,485.8	8,373.9	27.5	26.1	109.64	-566.0	-1,057.3	279.3	229.1	50.20	5.565	
8,600.0	8,472.4	8,585.8	8,473.8	27.6	26.2	109.64	-566.8	-1,058.6	279.3	228.9	50.44	5.537	
8,700.0	8,572.4	8,685.8	8,573.8	27.7	26.3	109.64	-567.5	-1,060.0	279.3	228.6	50.69	5.510	
8,800.0	8,672.4	8,785.8	8,673.8	27.8	26.4	109.64	-568.3	-1,061.3	279.3	228.4	50.94	5.483	
8,900.0	8,772.4	8,885.8	8,773.8	28.0	26.5	109.64	-569.1	-1,062.7	279.3	228.1	51.19	5.456	
9,000.0	8,872.3	8,985.8	8,873.8	28.1	26.7	109.64	-569.9	-1,064.0	279.3	227.9	51.45	5.430	
9,100.0	8,972.3	9,085.8	8,973.8	28.2	26.8	109.64	-570.6	-1,065.4	279.3	227.6	51.70	5.403	
9,200.0	9,072.3	9,185.8	9,073.8	28.3	26.9	109.64	-571.4	-1,066.7	279.3	227.4	51.95	5.377	
9,300.0	9,172.3	9,285.8	9,173.8	28.4	27.0	109.64	-572.2	-1,068.1	279.3	227.1	52.21	5.350	
9,400.0	9,272.3	9,385.8	9,273.7	28.6	27.2	109.63	-573.0	-1,069.4	279.3	226.9	52.47	5.324	
9,500.0	9,372.3	9,485.8	9,373.7	28.7	27.3	109.63	-573.8	-1,070.8	279.3	226.6	52.72	5.298	
9,600.0	9,472.3	9,585.8	9,473.7	28.8	27.4	109.63	-574.5	-1,072.1	279.3	226.4	52.98	5.272	
9,700.0	9,572.3	9,685.8	9,573.7	28.9	27.5	109.63	-575.3	-1,073.5	279.3	226.1	53.24	5.246	
9,800.0	9,672.2	9,785.8	9,673.7	29.0	27.7	109.63	-576.1	-1,074.8	279.3	225.8	53.50	5.221	
9,900.0	9,772.2	9,885.8	9,773.7	29.2	27.8	109.63	-576.9	-1,076.2	279.3	225.6	53.77	5.195	
10,000.0	9,872.2	9,985.8	9,873.7	29.3	27.9	109.63	-577.7	-1,077.5	279.3	225.3	54.03	5.170	
10,086.8	9,959.0	10,072.6	9,960.5	29.4	28.0	109.63	-578.3	-1,078.7	279.3	225.1	54.26	5.148 SF	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Sec 6 T6S R96W (F06 696) - Chevron 6-35D - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	36.89	24.0	18.0	30.1					
100.0	100.0	100.0	100.0	0.1	0.1	36.89	24.0	18.0	30.1	29.8	0.27	110.402		
200.0	200.0	200.0	200.0	0.3	0.3	36.89	24.0	18.0	30.1	29.4	0.62	48.379		
300.0	300.0	300.0	300.0	0.5	0.5	36.89	24.0	18.0	30.1	29.1	0.97	30.976 CC, ES		
400.0	400.0	400.8	400.8	0.7	0.7	165.39	23.7	16.3	30.5	29.1	1.32	23.042		
500.0	499.8	501.5	501.3	0.9	0.9	161.20	22.7	11.1	31.8	30.1	1.68	18.885		
600.0	599.5	602.1	601.6	1.1	1.1	154.98	21.0	2.4	34.3	32.2	2.07	16.552		
700.0	698.7	702.6	701.3	1.3	1.3	147.79	18.6	-9.7	38.4	35.9	2.53	15.205		
800.0	797.5	802.9	800.3	1.6	1.6	140.71	15.5	-25.1	44.4	41.3	3.07	14.440		
900.0	895.6	902.4	898.4	2.0	2.0	136.74	12.3	-41.5	52.9	49.3	3.67	14.424		
1,000.0	993.6	1,002.0	996.5	2.4	2.3	134.67	9.0	-58.0	62.4	58.1	4.29	14.550		
1,100.0	1,091.6	1,101.5	1,094.7	2.7	2.6	133.14	5.8	-74.4	72.0	67.0	4.93	14.605		
1,200.0	1,189.5	1,201.0	1,192.8	3.1	2.9	131.97	2.6	-90.9	81.5	76.0	5.58	14.625		
1,300.0	1,287.5	1,300.5	1,290.9	3.5	3.3	131.05	-0.7	-107.3	91.2	84.9	6.23	14.626		
1,400.0	1,385.5	1,400.1	1,389.0	3.9	3.6	130.30	-3.9	-123.8	100.8	93.9	6.89	14.618		
1,500.0	1,483.4	1,499.6	1,487.1	4.3	4.0	129.69	-7.2	-140.2	110.4	102.9	7.56	14.605		
1,600.0	1,581.4	1,599.1	1,585.2	4.7	4.3	129.17	-10.4	-156.6	120.1	111.9	8.23	14.590		
1,700.0	1,679.4	1,698.7	1,683.3	5.0	4.6	128.73	-13.7	-173.1	129.7	120.8	8.90	14.575		
1,800.0	1,777.3	1,798.2	1,781.4	5.4	5.0	128.35	-16.9	-189.5	139.4	129.8	9.58	14.559		
1,900.0	1,875.3	1,897.7	1,879.5	5.8	5.3	128.02	-20.2	-206.0	149.1	138.8	10.25	14.543		
2,000.0	1,973.3	1,997.2	1,977.6	6.2	5.6	127.73	-23.4	-222.4	158.8	147.8	10.93	14.529		
2,100.0	2,071.2	2,096.8	2,075.7	6.6	6.0	127.48	-26.6	-238.9	168.5	156.9	11.61	14.515		
2,200.0	2,169.2	2,196.3	2,173.8	7.0	6.3	127.25	-29.9	-255.3	178.1	165.9	12.28	14.502		
2,300.0	2,267.2	2,295.8	2,271.9	7.4	6.7	127.04	-33.1	-271.8	187.8	174.9	12.96	14.489		
2,400.0	2,365.1	2,395.3	2,370.0	7.8	7.0	126.86	-36.4	-288.2	197.5	183.9	13.64	14.478		
2,500.0	2,463.1	2,494.9	2,468.1	8.2	7.4	126.69	-39.6	-304.6	207.2	192.9	14.32	14.467		
2,600.0	2,561.0	2,594.4	2,566.2	8.6	7.7	126.54	-42.9	-321.1	216.9	201.9	15.00	14.456		
2,700.0	2,659.0	2,693.9	2,664.3	9.0	8.0	126.40	-46.1	-337.5	226.6	210.9	15.69	14.447		
2,800.0	2,757.0	2,793.5	2,762.5	9.4	8.4	126.27	-49.4	-354.0	236.3	219.9	16.37	14.438		
2,900.0	2,854.9	2,893.0	2,860.6	9.8	8.7	126.15	-52.6	-370.4	246.0	229.0	17.05	14.429		
3,000.0	2,952.9	2,992.5	2,958.7	10.1	9.1	126.04	-55.8	-386.9	255.7	238.0	17.73	14.421		
3,100.0	3,050.9	3,092.0	3,056.8	10.5	9.4	125.94	-59.1	-403.3	265.4	247.0	18.41	14.413		
3,200.0	3,148.8	3,191.6	3,154.9	10.9	9.8	125.85	-62.3	-419.8	275.1	256.0	19.10	14.406		
3,300.0	3,246.8	3,291.1	3,253.0	11.3	10.1	125.76	-65.6	-436.2	284.8	265.0	19.78	14.399		
3,400.0	3,344.8	3,390.6	3,351.1	11.7	10.4	125.68	-68.8	-452.6	294.5	274.0	20.46	14.393		
3,500.0	3,442.7	3,490.1	3,449.2	12.1	10.8	125.60	-72.1	-469.1	304.2	283.1	21.14	14.387		
3,600.0	3,540.7	3,589.7	3,547.3	12.5	11.1	125.53	-75.3	-485.5	313.9	292.1	21.83	14.381		
3,700.0	3,638.7	3,689.2	3,645.4	12.9	11.5	125.46	-78.6	-502.0	323.6	301.1	22.51	14.376		
3,800.0	3,736.6	3,788.7	3,743.5	13.3	11.8	125.40	-81.8	-518.4	333.3	310.1	23.19	14.371		
3,900.0	3,834.6	3,888.3	3,841.6	13.7	12.2	125.34	-85.0	-534.9	343.0	319.1	23.88	14.366		
4,000.0	3,932.6	3,987.8	3,939.7	14.1	12.5	125.28	-88.3	-551.3	352.7	328.2	24.56	14.361		
4,100.0	4,030.5	4,087.3	4,037.8	14.5	12.8	125.23	-91.5	-567.8	362.4	337.2	25.25	14.356		
4,200.0	4,128.5	4,186.8	4,135.9	14.9	13.2	125.18	-94.8	-584.2	372.1	346.2	25.93	14.352		
4,300.0	4,226.5	4,286.4	4,234.0	15.3	13.5	125.13	-98.0	-600.6	381.8	355.2	26.61	14.348		
4,400.0	4,324.4	4,385.9	4,332.1	15.7	13.9	125.09	-101.3	-617.1	391.6	364.3	27.30	14.344		
4,500.0	4,422.4	4,485.4	4,430.3	16.1	14.2	125.04	-104.5	-633.5	401.3	373.3	27.98	14.340		
4,600.0	4,520.3	4,584.9	4,528.4	16.5	14.6	125.00	-107.8	-650.0	411.0	382.3	28.67	14.337		
4,700.0	4,618.3	4,684.5	4,626.5	16.8	14.9	124.96	-111.0	-666.4	420.7	391.3	29.35	14.333		
4,800.0	4,716.3	4,784.0	4,724.6	17.2	15.2	124.92	-114.2	-682.9	430.4	400.3	30.03	14.330		
4,900.0	4,814.2	4,883.5	4,822.7	17.6	15.6	124.89	-117.5	-699.3	440.1	409.4	30.72	14.327		
5,000.0	4,912.2	4,983.1	4,920.8	18.0	15.9	124.85	-120.7	-715.8	449.8	418.4	31.40	14.324		
5,100.0	5,010.2	5,082.6	5,018.9	18.4	16.3	124.82	-124.0	-732.2	459.5	427.4	32.09	14.321		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
5,200.0	5,108.1	5,182.1	5,117.0	18.8	16.6	124.79	-127.2	-748.6	469.2	436.4	32.77	14.318		
5,300.0	5,206.1	5,281.6	5,215.1	19.2	17.0	124.76	-130.5	-765.1	478.9	445.5	33.45	14.315		
5,400.0	5,304.1	5,381.2	5,313.2	19.6	17.3	124.73	-133.7	-781.5	488.6	454.5	34.14	14.313		
5,500.0	5,402.0	5,480.7	5,411.3	20.0	17.6	124.70	-137.0	-798.0	498.3	463.5	34.82	14.310		
5,600.0	5,500.0	5,580.2	5,509.4	20.4	18.0	124.67	-140.2	-814.4	508.0	472.5	35.51	14.308		
5,700.0	5,598.0	5,679.7	5,607.5	20.8	18.3	124.65	-143.4	-830.9	517.7	481.6	36.19	14.305		
5,800.0	5,695.9	5,779.3	5,705.6	21.2	18.7	124.62	-146.7	-847.3	527.5	490.6	36.88	14.303		
5,900.0	5,793.9	5,878.8	5,803.7	21.6	19.0	124.60	-149.9	-863.8	537.2	499.6	37.56	14.301		
6,000.0	5,891.9	5,978.3	5,901.8	22.0	19.4	124.57	-153.2	-880.2	546.9	508.6	38.25	14.299		
6,100.0	5,989.8	6,077.9	5,999.9	22.4	19.7	124.55	-156.4	-896.6	556.6	517.6	38.93	14.297		
6,200.0	6,087.8	6,177.4	6,098.1	22.8	20.0	124.53	-159.7	-913.1	566.3	526.7	39.62	14.295		
6,300.0	6,185.8	6,276.9	6,196.2	23.2	20.4	124.51	-162.9	-929.5	576.0	535.7	40.30	14.293		
6,400.0	6,283.7	6,376.4	6,294.3	23.6	20.7	124.49	-166.2	-946.0	585.7	544.7	40.98	14.291		
6,500.0	6,381.7	6,476.0	6,392.4	24.0	21.1	124.47	-169.4	-962.4	595.4	553.7	41.67	14.289		
6,600.0	6,479.7	6,575.5	6,490.5	24.3	21.4	124.45	-172.6	-978.9	605.1	562.8	42.35	14.287		
6,700.0	6,577.6	6,675.0	6,588.6	24.7	21.8	124.43	-175.9	-995.3	614.8	571.8	43.04	14.285		
6,800.0	6,675.6	6,774.6	6,686.7	25.1	22.1	124.45	-179.1	-1,011.8	624.4	580.6	43.72	14.280		
6,900.0	6,774.2	6,873.6	6,784.3	25.4	22.4	124.34	-182.3	-1,028.0	632.3	587.9	44.39	14.244		
7,000.0	6,873.3	6,971.2	6,881.0	25.7	22.7	124.18	-185.0	-1,041.6	638.5	593.5	44.96	14.203		
7,100.0	6,972.8	7,069.0	6,978.2	25.9	22.9	124.03	-187.1	-1,051.9	643.1	597.7	45.42	14.160		
7,200.0	7,072.6	7,166.9	7,075.8	26.1	23.1	123.91	-188.5	-1,059.0	646.1	600.3	45.77	14.114		
7,300.0	7,172.5	7,265.0	7,173.8	26.2	23.2	123.81	-189.2	-1,062.9	647.4	601.4	46.03	14.064		
7,400.0	7,272.5	7,364.1	7,272.9	26.3	23.3	113.86	-189.4	-1,063.6	647.5	601.2	46.24	14.003		
7,500.0	7,372.5	7,465.2	7,374.1	26.4	23.4	113.87	-189.6	-1,063.9	647.5	601.1	46.45	13.940		
7,600.0	7,472.5	7,566.4	7,475.2	26.5	23.6	113.88	-190.0	-1,064.7	647.6	600.9	46.68	13.874		
7,700.0	7,572.5	7,667.6	7,576.4	26.6	23.7	113.89	-190.6	-1,065.8	647.6	600.7	46.91	13.805		
7,800.0	7,672.5	7,767.8	7,676.6	26.7	23.8	113.89	-191.4	-1,067.1	647.6	600.5	47.15	13.735		
7,900.0	7,772.5	7,867.8	7,776.6	26.8	23.9	113.89	-192.2	-1,068.4	647.6	600.2	47.39	13.665		
8,000.0	7,872.5	7,967.8	7,876.5	26.9	24.0	113.89	-192.9	-1,069.8	647.6	600.0	47.64	13.595		
8,100.0	7,972.5	8,067.8	7,976.5	27.0	24.2	113.89	-193.7	-1,071.1	647.6	599.7	47.88	13.526		
8,200.0	8,072.4	8,167.8	8,076.5	27.1	24.3	113.89	-194.5	-1,072.5	647.6	599.5	48.13	13.457		
8,300.0	8,172.4	8,267.8	8,176.5	27.3	24.4	113.89	-195.3	-1,073.8	647.6	599.3	48.37	13.388		
8,400.0	8,272.4	8,367.8	8,276.5	27.4	24.5	113.89	-196.1	-1,075.2	647.6	599.0	48.62	13.320		
8,500.0	8,372.4	8,467.8	8,376.5	27.5	24.6	113.89	-196.8	-1,076.5	647.6	598.8	48.87	13.251		
8,600.0	8,472.4	8,567.8	8,476.5	27.6	24.8	113.89	-197.6	-1,077.9	647.6	598.5	49.12	13.184		
8,700.0	8,572.4	8,667.8	8,576.5	27.7	24.9	113.88	-198.4	-1,079.2	647.6	598.2	49.37	13.116		
8,800.0	8,672.4	8,767.8	8,676.4	27.8	25.0	113.88	-199.2	-1,080.6	647.6	598.0	49.63	13.050		
8,900.0	8,772.4	8,867.8	8,776.4	28.0	25.2	113.88	-200.0	-1,081.9	647.6	597.7	49.88	12.983		
9,000.0	8,872.3	8,967.8	8,876.4	28.1	25.3	113.88	-200.7	-1,083.3	647.6	597.5	50.14	12.917		
9,100.0	8,972.3	9,067.8	8,976.4	28.2	25.4	113.88	-201.5	-1,084.6	647.6	597.2	50.40	12.851		
9,200.0	9,072.3	9,167.8	9,076.4	28.3	25.5	113.88	-202.3	-1,085.9	647.6	597.0	50.65	12.785		
9,300.0	9,172.3	9,267.8	9,176.4	28.4	25.7	113.88	-203.1	-1,087.3	647.6	596.7	50.91	12.720		
9,400.0	9,272.3	9,367.8	9,276.4	28.6	25.8	113.88	-203.9	-1,088.6	647.6	596.4	51.17	12.656		
9,500.0	9,372.3	9,467.8	9,376.4	28.7	25.9	113.88	-204.6	-1,090.0	647.6	596.2	51.43	12.591		
9,600.0	9,472.3	9,567.8	9,476.3	28.8	26.1	113.88	-205.4	-1,091.3	647.6	595.9	51.70	12.527		
9,700.0	9,572.3	9,667.8	9,576.3	28.9	26.2	113.88	-206.2	-1,092.7	647.6	595.7	51.96	12.464		
9,800.0	9,672.2	9,767.8	9,676.3	29.0	26.3	113.88	-207.0	-1,094.0	647.6	595.4	52.22	12.401		
9,900.0	9,772.2	9,867.8	9,776.3	29.2	26.5	113.88	-207.8	-1,095.4	647.6	595.1	52.49	12.338		
10,000.0	9,872.2	9,967.8	9,876.3	29.3	26.6	113.88	-208.5	-1,096.7	647.6	594.9	52.76	12.276		
10,086.8	9,959.0	10,054.6	9,963.1	29.4	26.7	113.88	-209.2	-1,097.9	647.6	594.6	52.99	12.222 SF		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	36.89	36.1	27.1	45.1					
100.0	100.0	100.0	100.0	0.1	0.1	36.89	36.1	27.1	45.1	44.8	0.27	165.604		
200.0	200.0	200.0	200.0	0.3	0.3	36.89	36.1	27.1	45.1	44.5	0.62	72.568		
300.0	300.0	300.8	300.8	0.5	0.5	34.95	36.2	25.3	44.2	43.2	0.98	45.283		
388.2	388.2	389.6	389.4	0.6	0.7	160.28	36.5	20.8	43.3	42.0	1.30	33.363 CC		
400.0	400.0	401.4	401.3	0.7	0.7	159.50	36.6	20.0	43.4	42.0	1.34	32.285 ES		
500.0	499.8	501.8	501.3	0.9	0.9	151.64	37.3	11.2	44.9	43.2	1.75	25.734		
600.0	599.5	601.8	600.5	1.1	1.2	142.79	38.2	-1.0	49.5	47.3	2.21	22.413		
700.0	698.7	701.3	698.8	1.3	1.5	134.81	39.4	-16.3	57.5	54.8	2.74	20.991		
800.0	797.5	800.6	796.8	1.6	1.8	130.55	40.6	-32.1	68.5	65.2	3.31	20.712		
900.0	895.6	899.7	894.6	2.0	2.1	129.34	41.8	-47.8	81.9	78.0	3.91	20.951		
1,000.0	993.6	998.7	992.4	2.4	2.4	129.10	43.0	-63.6	96.0	91.5	4.53	21.208		
1,100.0	1,091.6	1,097.7	1,090.1	2.7	2.8	128.92	44.2	-79.4	110.1	105.0	5.16	21.364		
1,200.0	1,189.5	1,196.7	1,187.8	3.1	3.1	128.78	45.4	-95.1	124.2	118.5	5.79	21.464		
1,300.0	1,287.5	1,295.7	1,285.6	3.5	3.4	128.67	46.6	-110.9	138.3	131.9	6.43	21.529		
1,400.0	1,385.5	1,394.7	1,383.3	3.9	3.7	128.58	47.8	-126.7	152.5	145.4	7.07	21.572		
1,500.0	1,483.4	1,493.7	1,481.0	4.3	4.1	128.51	49.0	-142.4	166.6	158.8	7.71	21.602		
1,600.0	1,581.4	1,592.7	1,578.8	4.7	4.4	128.45	50.2	-158.2	180.7	172.3	8.35	21.623		
1,700.0	1,679.4	1,691.7	1,676.5	5.0	4.7	128.39	51.4	-173.9	194.8	185.8	9.00	21.637		
1,800.0	1,777.3	1,790.7	1,774.2	5.4	5.0	128.34	52.6	-189.7	208.9	199.2	9.65	21.646		
1,900.0	1,875.3	1,889.7	1,871.9	5.8	5.4	128.30	53.8	-205.5	223.0	212.7	10.30	21.653		
2,000.0	1,973.3	1,988.7	1,969.7	6.2	5.7	128.27	55.0	-221.2	237.1	226.1	10.95	21.657		
2,100.0	2,071.2	2,087.7	2,067.4	6.6	6.0	128.24	56.2	-237.0	251.2	239.6	11.60	21.660		
2,200.0	2,169.2	2,186.7	2,165.1	7.0	6.3	128.21	57.4	-252.7	265.3	253.0	12.25	21.661		
2,300.0	2,267.2	2,285.7	2,262.9	7.4	6.7	128.18	58.6	-268.5	279.4	266.5	12.90	21.662		
2,400.0	2,365.1	2,384.7	2,360.6	7.8	7.0	128.16	59.8	-284.3	293.5	279.9	13.55	21.662		
2,500.0	2,463.1	2,483.7	2,458.3	8.2	7.3	128.14	61.0	-300.0	307.6	293.4	14.20	21.661		
2,600.0	2,561.0	2,582.7	2,556.1	8.6	7.6	128.12	62.2	-315.8	321.7	306.8	14.85	21.660		
2,700.0	2,659.0	2,681.7	2,653.8	9.0	8.0	128.10	63.4	-331.6	335.8	320.3	15.50	21.659		
2,800.0	2,757.0	2,780.7	2,751.5	9.4	8.3	128.08	64.6	-347.3	349.9	333.7	16.16	21.657		
2,900.0	2,854.9	2,879.7	2,849.2	9.8	8.6	128.07	65.8	-363.1	364.0	347.2	16.81	21.656		
3,000.0	2,952.9	2,978.7	2,947.0	10.1	9.0	128.06	67.0	-378.8	378.1	360.6	17.46	21.654		
3,100.0	3,050.9	3,077.7	3,044.7	10.5	9.3	128.04	68.2	-394.6	392.2	374.1	18.11	21.652		
3,200.0	3,148.8	3,176.7	3,142.4	10.9	9.6	128.03	69.4	-410.4	406.3	387.5	18.77	21.651		
3,300.0	3,246.8	3,275.7	3,240.2	11.3	9.9	128.02	70.6	-426.1	420.4	401.0	19.42	21.649		
3,400.0	3,344.8	3,374.7	3,337.9	11.7	10.3	128.01	71.8	-441.9	434.5	414.4	20.07	21.647		
3,500.0	3,442.7	3,473.7	3,435.6	12.1	10.6	128.00	73.0	-457.7	448.6	427.9	20.73	21.645		
3,600.0	3,540.7	3,572.7	3,533.4	12.5	10.9	127.99	74.2	-473.4	462.7	441.3	21.38	21.644		
3,700.0	3,638.7	3,671.7	3,631.1	12.9	11.3	127.98	75.4	-489.2	476.8	454.8	22.03	21.642		
3,800.0	3,736.6	3,770.7	3,728.8	13.3	11.6	127.97	76.6	-504.9	490.9	468.2	22.69	21.640		
3,900.0	3,834.6	3,869.7	3,826.6	13.7	11.9	127.97	77.8	-520.7	505.0	481.7	23.34	21.638		
4,000.0	3,932.6	3,968.7	3,924.3	14.1	12.2	127.96	79.0	-536.5	519.1	495.1	23.99	21.637		
4,100.0	4,030.5	4,067.7	4,022.0	14.5	12.6	127.95	80.2	-552.2	533.2	508.6	24.65	21.635		
4,200.0	4,128.5	4,166.7	4,119.7	14.9	12.9	127.95	81.4	-568.0	547.3	522.0	25.30	21.634		
4,300.0	4,226.5	4,265.7	4,217.5	15.3	13.2	127.94	82.6	-583.8	561.4	535.5	25.95	21.632		
4,400.0	4,324.4	4,364.7	4,315.2	15.7	13.6	127.93	83.8	-599.5	575.5	548.9	26.61	21.631		
4,500.0	4,422.4	4,463.7	4,412.9	16.1	13.9	127.93	85.0	-615.3	589.6	562.4	27.26	21.629		
4,600.0	4,520.3	4,562.7	4,510.7	16.5	14.2	127.92	86.2	-631.0	603.8	575.8	27.92	21.628		
4,700.0	4,618.3	4,661.7	4,608.4	16.8	14.5	127.92	87.4	-646.8	617.9	589.3	28.57	21.626		
4,800.0	4,716.3	4,760.7	4,706.1	17.2	14.9	127.91	88.6	-662.6	632.0	602.7	29.22	21.625		
4,900.0	4,814.2	4,859.7	4,803.9	17.6	15.2	127.91	89.8	-678.3	646.1	616.2	29.88	21.624		
5,000.0	4,912.2	4,958.7	4,901.6	18.0	15.5	127.90	91.0	-694.1	660.2	629.6	30.53	21.622		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
5,100.0	5,010.2	5,057.7	4,999.3	18.4	15.8	127.90	92.2	-709.8	674.3	643.1	31.19	21.621		
5,200.0	5,108.1	5,156.7	5,097.0	18.8	16.2	127.90	93.4	-725.6	688.4	656.5	31.84	21.620		
5,300.0	5,206.1	5,255.7	5,194.8	19.2	16.5	127.89	94.6	-741.4	702.5	670.0	32.49	21.619		
5,400.0	5,304.1	5,354.7	5,292.5	19.6	16.8	127.89	95.8	-757.1	716.6	683.4	33.15	21.618		
5,500.0	5,402.0	5,453.7	5,390.2	20.0	17.2	127.88	97.0	-772.9	730.7	696.9	33.80	21.616		
5,600.0	5,500.0	5,552.7	5,488.0	20.4	17.5	127.88	98.2	-788.7	744.8	710.3	34.46	21.615		
5,700.0	5,598.0	5,651.7	5,585.7	20.8	17.8	127.88	99.4	-804.4	758.9	723.8	35.11	21.614		
5,800.0	5,695.9	5,750.7	5,683.4	21.2	18.1	127.87	100.6	-820.2	773.0	737.2	35.76	21.613		
5,900.0	5,793.9	5,849.7	5,781.2	21.6	18.5	127.87	101.8	-835.9	787.1	750.7	36.42	21.612		
6,000.0	5,891.9	5,948.7	5,878.9	22.0	18.8	127.87	103.0	-851.7	801.2	764.1	37.07	21.611		
6,100.0	5,989.8	6,047.7	5,976.6	22.4	19.1	127.87	104.2	-867.5	815.3	777.6	37.73	21.610		
6,200.0	6,087.8	6,146.7	6,074.3	22.8	19.5	127.86	105.4	-883.2	829.4	791.0	38.38	21.609		
6,300.0	6,185.8	6,245.7	6,172.1	23.2	19.8	127.86	106.6	-899.0	843.5	804.5	39.04	21.609		
6,400.0	6,283.7	6,344.7	6,269.8	23.6	20.1	127.86	107.8	-914.8	857.6	817.9	39.69	21.608		
6,500.0	6,381.7	6,443.7	6,367.5	24.0	20.4	127.85	109.0	-930.5	871.7	831.4	40.34	21.607		
6,600.0	6,479.7	6,542.7	6,465.3	24.3	20.8	127.85	110.2	-946.3	885.8	844.8	41.00	21.606		
6,700.0	6,577.6	6,641.7	6,563.0	24.7	21.1	127.85	111.4	-962.0	899.9	858.3	41.65	21.605		
6,800.0	6,675.6	6,740.7	6,660.8	25.1	21.4	127.92	112.6	-977.8	913.8	871.5	42.31	21.598		
6,900.0	6,774.2	6,840.0	6,758.7	25.4	21.8	127.96	113.8	-993.6	926.0	883.0	42.95	21.558		
7,000.0	6,873.3	6,941.0	6,858.5	25.7	22.1	127.81	115.0	-1,009.3	936.0	892.4	43.56	21.488		
7,100.0	6,972.8	7,044.5	6,961.1	25.9	22.3	127.64	116.0	-1,022.2	943.5	899.4	44.06	21.412		
7,200.0	7,072.6	7,148.3	7,064.5	26.1	22.5	127.48	116.7	-1,031.5	948.5	904.1	44.47	21.332		
7,300.0	7,172.5	7,252.3	7,168.4	26.2	22.7	127.34	117.1	-1,037.0	951.0	906.2	44.76	21.247		
7,400.0	7,272.5	7,356.5	7,272.6	26.3	22.8	117.34	117.3	-1,038.8	951.4	906.4	44.99	21.148		
7,500.0	7,372.5	7,458.4	7,374.5	26.4	22.9	117.36	117.1	-1,039.0	951.5	906.3	45.20	21.049		
7,600.0	7,472.5	7,560.4	7,476.5	26.5	23.0	117.37	116.8	-1,039.6	951.6	906.2	45.43	20.946		
7,700.0	7,572.5	7,662.3	7,578.4	26.6	23.1	117.38	116.2	-1,040.6	951.7	906.1	45.67	20.838		
7,800.0	7,672.5	7,763.2	7,679.3	26.7	23.3	117.39	115.5	-1,041.9	951.8	905.8	45.92	20.728		
7,900.0	7,772.5	7,863.2	7,779.3	26.8	23.4	117.39	114.7	-1,043.3	951.8	905.6	46.16	20.618		
8,000.0	7,872.5	7,963.2	7,879.2	26.9	23.5	117.39	113.9	-1,044.6	951.8	905.3	46.41	20.508		
8,100.0	7,972.5	8,063.2	7,979.2	27.0	23.6	117.39	113.1	-1,045.9	951.8	905.1	46.66	20.399		
8,200.0	8,072.4	8,163.2	8,079.2	27.1	23.8	117.39	112.4	-1,047.3	951.8	904.9	46.91	20.291		
8,300.0	8,172.4	8,263.2	8,179.2	27.3	23.9	117.39	111.6	-1,048.6	951.8	904.6	47.16	20.183		
8,400.0	8,272.4	8,363.2	8,279.2	27.4	24.0	117.39	110.8	-1,050.0	951.8	904.4	47.41	20.076		
8,500.0	8,372.4	8,463.2	8,379.2	27.5	24.1	117.39	110.0	-1,051.3	951.8	904.1	47.66	19.969		
8,600.0	8,472.4	8,563.2	8,479.2	27.6	24.2	117.39	109.2	-1,052.7	951.8	903.9	47.92	19.863		
8,700.0	8,572.4	8,663.2	8,579.2	27.7	24.4	117.39	108.5	-1,054.0	951.8	903.6	48.17	19.758		
8,800.0	8,672.4	8,763.2	8,679.1	27.8	24.5	117.39	107.7	-1,055.4	951.8	903.3	48.43	19.653		
8,900.0	8,772.4	8,863.2	8,779.1	28.0	24.6	117.39	106.9	-1,056.7	951.8	903.1	48.69	19.549		
9,000.0	8,872.3	8,963.2	8,879.1	28.1	24.8	117.39	106.1	-1,058.1	951.8	902.8	48.95	19.446		
9,100.0	8,972.3	9,063.2	8,979.1	28.2	24.9	117.39	105.4	-1,059.4	951.8	902.6	49.21	19.343		
9,200.0	9,072.3	9,163.2	9,079.1	28.3	25.0	117.39	104.6	-1,060.8	951.8	902.3	49.47	19.240		
9,300.0	9,172.3	9,263.2	9,179.1	28.4	25.1	117.39	103.8	-1,062.1	951.8	902.1	49.73	19.139		
9,400.0	9,272.3	9,363.2	9,279.1	28.6	25.3	117.39	103.0	-1,063.4	951.8	901.8	49.99	19.038		
9,500.0	9,372.3	9,463.2	9,379.1	28.7	25.4	117.39	102.3	-1,064.8	951.8	901.5	50.26	18.938		
9,600.0	9,472.3	9,563.2	9,479.1	28.8	25.5	117.39	101.5	-1,066.1	951.8	901.3	50.53	18.838		
9,700.0	9,572.3	9,663.2	9,579.0	28.9	25.7	117.39	100.7	-1,067.5	951.8	901.0	50.79	18.739		
9,800.0	9,672.2	9,763.2	9,679.0	29.0	25.8	117.39	99.9	-1,068.8	951.8	900.7	51.06	18.641		
9,900.0	9,772.2	9,863.2	9,779.0	29.2	25.9	117.39	99.2	-1,070.2	951.8	900.5	51.33	18.543		
10,000.0	9,872.2	9,963.2	9,879.0	29.3	26.1	117.39	98.4	-1,071.5	951.8	900.2	51.60	18.446		
10,086.8	9,959.0	10,050.0	9,965.8	29.4	26.2	117.39	97.7	-1,072.7	951.8	900.0	51.83	18.362 SF		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design      Sec 6 T6S R96W (F06 696) - Chevron 6-37D - DD - Plan #2													Offset Site Error:      0.0 ft	
Survey Program:      0-MWD													Offset Well Error:      0.0 ft	
Reference		Offset		Semi Major Axis			Distance							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	36.89	48.1	36.1	60.1					
100.0	100.0	100.0	100.0	0.1	0.1	36.89	48.1	36.1	60.1	59.8	0.27	220.805		
200.0	200.0	200.0	200.0	0.3	0.3	36.89	48.1	36.1	60.1	59.5	0.62	96.757		
300.0	300.0	300.0	300.0	0.5	0.5	36.89	48.1	36.1	60.1	59.1	0.97	61.952	CC, ES	
400.0	400.0	400.6	400.6	0.7	0.7	165.66	48.7	34.4	61.3	60.0	1.32	46.350		
500.0	499.8	501.0	500.8	0.9	0.9	162.31	50.5	29.5	65.1	63.4	1.69	38.508		
600.0	599.5	601.0	600.5	1.1	1.1	157.53	53.4	21.2	71.7	69.6	2.09	34.338		
700.0	698.7	700.5	699.2	1.3	1.3	152.21	57.5	9.8	81.6	79.1	2.54	32.143		
800.0	797.5	799.3	796.8	1.6	1.6	147.04	62.8	-4.7	95.1	92.1	3.07	31.007		
900.0	895.6	897.6	893.5	2.0	2.0	143.12	68.7	-21.1	112.1	108.5	3.64	30.794		
1,000.0	993.6	995.8	990.2	2.4	2.3	140.65	74.6	-37.5	130.3	126.0	4.24	30.701		
1,100.0	1,091.6	1,094.0	1,086.9	2.7	2.6	138.78	80.4	-53.8	148.6	143.7	4.86	30.568		
1,200.0	1,189.5	1,192.2	1,183.5	3.1	3.0	137.33	86.3	-70.2	167.0	161.5	5.49	30.428		
1,300.0	1,287.5	1,290.4	1,280.2	3.5	3.3	136.16	92.2	-86.6	185.5	179.4	6.13	30.293		
1,400.0	1,385.5	1,388.6	1,376.8	3.9	3.7	135.21	98.1	-102.9	204.1	197.4	6.77	30.169		
1,500.0	1,483.4	1,486.9	1,473.5	4.3	4.0	134.41	104.0	-119.3	222.8	215.3	7.41	30.057		
1,600.0	1,581.4	1,585.1	1,570.1	4.7	4.3	133.74	109.9	-135.6	241.4	233.4	8.06	29.956		
1,700.0	1,679.4	1,683.3	1,666.8	5.0	4.7	133.16	115.8	-152.0	260.1	251.4	8.71	29.866		
1,800.0	1,777.3	1,781.5	1,763.4	5.4	5.0	132.67	121.7	-168.4	278.8	269.5	9.36	29.785		
1,900.0	1,875.3	1,879.7	1,860.1	5.8	5.4	132.23	127.6	-184.7	297.6	287.6	10.01	29.713		
2,000.0	1,973.3	1,977.9	1,956.7	6.2	5.7	131.85	133.5	-201.1	316.3	305.6	10.67	29.647		
2,100.0	2,071.2	2,076.1	2,053.4	6.6	6.1	131.50	139.3	-217.4	335.1	323.7	11.32	29.588		
2,200.0	2,169.2	2,174.3	2,150.1	7.0	6.4	131.20	145.2	-233.8	353.8	341.9	11.98	29.534		
2,300.0	2,267.2	2,272.5	2,246.7	7.4	6.8	130.93	151.1	-250.2	372.6	360.0	12.64	29.485		
2,400.0	2,365.1	2,370.7	2,343.4	7.8	7.1	130.68	157.0	-266.5	391.4	378.1	13.30	29.440		
2,500.0	2,463.1	2,468.9	2,440.0	8.2	7.5	130.45	162.9	-282.9	410.2	396.2	13.95	29.399		
2,600.0	2,561.0	2,567.1	2,536.7	8.6	7.8	130.25	168.8	-299.2	429.0	414.4	14.61	29.361		
2,700.0	2,659.0	2,665.3	2,633.3	9.0	8.2	130.06	174.7	-315.6	447.8	432.5	15.27	29.326		
2,800.0	2,757.0	2,763.5	2,730.0	9.4	8.5	129.88	180.6	-332.0	466.6	450.7	15.93	29.294		
2,900.0	2,854.9	2,861.7	2,826.6	9.8	8.9	129.73	186.5	-348.3	485.4	468.8	16.59	29.264		
3,000.0	2,952.9	2,959.9	2,923.3	10.1	9.2	129.58	192.3	-364.7	504.2	487.0	17.25	29.236		
3,100.0	3,050.9	3,058.2	3,019.9	10.5	9.6	129.44	198.2	-381.0	523.1	505.1	17.91	29.210		
3,200.0	3,148.8	3,156.4	3,116.6	10.9	9.9	129.31	204.1	-397.4	541.9	523.3	18.57	29.185		
3,300.0	3,246.8	3,254.6	3,213.3	11.3	10.3	129.19	210.0	-413.8	560.7	541.5	19.23	29.163		
3,400.0	3,344.8	3,352.8	3,309.9	11.7	10.6	129.08	215.9	-430.1	579.5	559.6	19.89	29.141		
3,500.0	3,442.7	3,451.0	3,406.6	12.1	11.0	128.98	221.8	-446.5	598.3	577.8	20.55	29.121		
3,600.0	3,540.7	3,549.2	3,503.2	12.5	11.4	128.88	227.7	-462.9	617.2	596.0	21.21	29.102		
3,700.0	3,638.7	3,647.4	3,599.9	12.9	11.7	128.79	233.6	-479.2	636.0	614.1	21.87	29.084		
3,800.0	3,736.6	3,745.6	3,696.5	13.3	12.1	128.70	239.5	-495.6	654.8	632.3	22.53	29.068		
3,900.0	3,834.6	3,843.8	3,793.2	13.7	12.4	128.62	245.3	-511.9	673.7	650.5	23.19	29.052		
4,000.0	3,932.6	3,942.0	3,889.8	14.1	12.8	128.54	251.2	-528.3	692.5	668.7	23.85	29.037		
4,100.0	4,030.5	4,040.2	3,986.5	14.5	13.1	128.47	257.1	-544.7	711.3	686.8	24.51	29.022		
4,200.0	4,128.5	4,138.4	4,083.1	14.9	13.5	128.40	263.0	-561.0	730.2	705.0	25.17	29.009		
4,300.0	4,226.5	4,236.6	4,179.8	15.3	13.8	128.33	268.9	-577.4	749.0	723.2	25.83	28.996		
4,400.0	4,324.4	4,334.8	4,276.4	15.7	14.2	128.27	274.8	-593.7	767.9	741.4	26.49	28.983		
4,500.0	4,422.4	4,433.0	4,373.1	16.1	14.5	128.21	280.7	-610.1	786.7	759.5	27.15	28.972		
4,600.0	4,520.3	4,531.2	4,469.8	16.5	14.9	128.15	286.6	-626.5	805.5	777.7	27.81	28.960		
4,700.0	4,618.3	4,629.5	4,566.4	16.8	15.2	128.10	292.5	-642.8	824.4	795.9	28.48	28.950		
4,800.0	4,716.3	4,727.7	4,663.1	17.2	15.6	128.05	298.4	-659.2	843.2	814.1	29.14	28.939		
4,900.0	4,814.2	4,825.9	4,759.7	17.6	15.9	128.00	304.2	-675.5	862.1	832.3	29.80	28.930		
5,000.0	4,912.2	4,924.1	4,856.4	18.0	16.3	127.95	310.1	-691.9	880.9	850.4	30.46	28.920		
5,100.0	5,010.2	5,022.3	4,953.0	18.4	16.6	127.90	316.0	-708.3	899.7	868.6	31.12	28.911		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
5,200.0	5,108.1	5,120.5	5,049.7	18.8	17.0	127.86	321.9	-724.6	918.6	886.8	31.78	28.903		
5,300.0	5,206.1	5,218.7	5,146.3	19.2	17.3	127.82	327.8	-741.0	937.4	905.0	32.44	28.894		
5,400.0	5,304.1	5,316.9	5,243.0	19.6	17.7	127.78	333.7	-757.4	956.3	923.2	33.10	28.886		
5,500.0	5,402.0	5,415.1	5,339.6	20.0	18.0	127.74	339.6	-773.7	975.1	941.4	33.77	28.879		
5,600.0	5,500.0	5,513.3	5,436.3	20.4	18.4	127.70	345.5	-790.1	994.0	959.5	34.43	28.871		
5,700.0	5,598.0	5,611.5	5,533.0	20.8	18.7	127.66	351.4	-806.4	1,012.8	977.7	35.09	28.864		
5,800.0	5,695.9	5,709.7	5,629.6	21.2	19.1	127.63	357.2	-822.8	1,031.7	995.9	35.75	28.857		
5,900.0	5,793.9	5,807.9	5,726.3	21.6	19.4	127.60	363.1	-839.2	1,050.5	1,014.1	36.41	28.850		
6,000.0	5,891.9	5,906.1	5,822.9	22.0	19.8	127.56	369.0	-855.5	1,069.4	1,032.3	37.07	28.844		
6,100.0	5,989.8	6,004.3	5,919.6	22.4	20.1	127.53	374.9	-871.9	1,088.2	1,050.5	37.74	28.838		
6,200.0	6,087.8	6,102.5	6,016.2	22.8	20.5	127.50	380.8	-888.2	1,107.0	1,068.7	38.40	28.832		
6,300.0	6,185.8	6,200.7	6,112.9	23.2	20.8	127.47	386.7	-904.6	1,125.9	1,086.8	39.06	28.826		
6,400.0	6,283.7	6,299.0	6,209.5	23.6	21.2	127.45	392.6	-921.0	1,144.7	1,105.0	39.72	28.821		
6,500.0	6,381.7	6,397.2	6,306.2	24.0	21.6	127.42	398.5	-937.3	1,163.6	1,123.2	40.38	28.815		
6,600.0	6,479.7	6,495.4	6,402.8	24.3	21.9	127.39	404.4	-953.7	1,182.4	1,141.4	41.04	28.810		
6,700.0	6,577.6	6,593.6	6,499.5	24.7	22.3	127.37	410.2	-970.0	1,201.3	1,159.6	41.70	28.805		
6,800.0	6,675.6	6,691.8	6,596.2	25.1	22.6	127.46	416.1	-986.4	1,220.0	1,177.6	42.38	28.786 SF		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Chevron 6-33D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	36.72	60.1	44.8	75.0					
100.0	100.0	100.0	100.0	0.1	0.1	36.72	60.1	44.8	75.0	74.7	0.27	275.386		
200.0	200.0	200.0	200.0	0.3	0.3	36.72	60.1	44.8	75.0	74.4	0.62	120.675		
297.5	297.5	297.5	297.5	0.5	0.5	35.45	61.1	43.5	75.0	74.0	0.96	77.819 CC		
300.0	300.0	300.0	300.0	0.5	0.5	35.39	61.1	43.4	75.0	74.0	0.97	77.120 ES		
400.0	400.0	399.8	399.6	0.7	0.7	161.79	64.1	39.2	76.8	75.5	1.34	57.162		
500.0	499.8	499.1	498.6	0.9	0.9	156.88	69.1	32.1	82.6	80.9	1.74	47.423		
600.0	599.5	597.7	596.4	1.1	1.2	151.52	76.1	22.4	92.8	90.7	2.18	42.558		
700.0	698.7	695.2	692.8	1.3	1.5	146.47	84.9	10.1	107.6	105.0	2.67	40.316		
800.0	797.5	792.7	788.6	1.6	1.8	142.40	95.1	-4.3	126.8	123.6	3.20	39.668		
900.0	895.6	890.0	884.3	2.0	2.2	140.12	105.4	-18.8	148.9	145.2	3.75	39.678		
1,000.0	993.6	987.3	979.9	2.4	2.5	138.85	115.8	-33.3	172.0	167.7	4.33	39.691		
1,100.0	1,091.6	1,084.5	1,075.5	2.7	2.8	137.87	126.1	-47.8	195.2	190.2	4.92	39.629		
1,200.0	1,189.5	1,181.7	1,171.1	3.1	3.2	137.11	136.4	-62.3	218.4	212.8	5.52	39.535		
1,300.0	1,287.5	1,279.0	1,266.7	3.5	3.5	136.49	146.7	-76.8	241.6	235.5	6.13	39.431		
1,400.0	1,385.5	1,376.2	1,362.3	3.9	3.9	135.98	157.0	-91.3	264.8	258.1	6.73	39.327		
1,500.0	1,483.4	1,473.5	1,457.9	4.3	4.3	135.55	167.4	-105.8	288.1	280.8	7.34	39.227		
1,600.0	1,581.4	1,570.7	1,553.5	4.7	4.6	135.18	177.7	-120.3	311.4	303.4	7.96	39.133		
1,700.0	1,679.4	1,667.9	1,649.1	5.0	5.0	134.87	188.0	-134.8	334.7	326.1	8.57	39.046		
1,800.0	1,777.3	1,765.2	1,744.7	5.4	5.3	134.60	198.3	-149.3	358.0	348.8	9.19	38.965		
1,900.0	1,875.3	1,862.4	1,840.3	5.8	5.7	134.36	208.6	-163.8	381.3	371.5	9.80	38.891		
2,000.0	1,973.3	1,959.6	1,935.8	6.2	6.0	134.14	219.0	-178.3	404.6	394.2	10.42	38.822		
2,100.0	2,071.2	2,056.9	2,031.4	6.6	6.4	133.96	229.3	-192.8	427.9	416.9	11.04	38.759		
2,200.0	2,169.2	2,154.1	2,127.0	7.0	6.7	133.79	239.6	-207.3	451.2	439.6	11.66	38.701		
2,300.0	2,267.2	2,251.3	2,222.6	7.4	7.1	133.63	249.9	-221.8	474.6	462.3	12.28	38.647		
2,400.0	2,365.1	2,348.6	2,318.2	7.8	7.4	133.49	260.2	-236.3	497.9	485.0	12.90	38.597		
2,500.0	2,463.1	2,445.8	2,413.8	8.2	7.8	133.37	270.6	-250.7	521.2	507.7	13.52	38.551		
2,600.0	2,561.0	2,543.0	2,509.4	8.6	8.2	133.25	280.9	-265.2	544.5	530.4	14.14	38.508		
2,700.0	2,659.0	2,640.3	2,605.0	9.0	8.5	133.15	291.2	-279.7	567.9	553.1	14.76	38.468		
2,800.0	2,757.0	2,737.5	2,700.6	9.4	8.9	133.05	301.5	-294.2	591.2	575.8	15.38	38.431		
2,900.0	2,854.9	2,834.7	2,796.2	9.8	9.2	132.96	311.8	-308.7	614.5	598.5	16.01	38.396		
3,000.0	2,952.9	2,932.0	2,891.8	10.1	9.6	132.88	322.2	-323.2	637.9	621.2	16.63	38.363		
3,100.0	3,050.9	3,029.2	2,987.4	10.5	9.9	132.80	332.5	-337.7	661.2	644.0	17.25	38.333		
3,200.0	3,148.8	3,126.4	3,083.0	10.9	10.3	132.73	342.8	-352.2	684.6	666.7	17.87	38.304		
3,300.0	3,246.8	3,223.7	3,178.6	11.3	10.6	132.66	353.1	-366.7	707.9	689.4	18.49	38.277		
3,400.0	3,344.8	3,320.9	3,274.2	11.7	11.0	132.60	363.4	-381.2	731.2	712.1	19.12	38.251		
3,500.0	3,442.7	3,418.2	3,369.7	12.1	11.4	132.54	373.8	-395.7	754.6	734.8	19.74	38.227		
3,600.0	3,540.7	3,515.4	3,465.3	12.5	11.7	132.48	384.1	-410.2	777.9	757.6	20.36	38.204		
3,700.0	3,638.7	3,612.6	3,560.9	12.9	12.1	132.43	394.4	-424.7	801.3	780.3	20.99	38.182		
3,800.0	3,736.6	3,709.9	3,656.5	13.3	12.4	132.38	404.7	-439.2	824.6	803.0	21.61	38.162		
3,900.0	3,834.6	3,807.1	3,752.1	13.7	12.8	132.33	415.0	-453.7	847.9	825.7	22.23	38.142		
4,000.0	3,932.6	3,904.3	3,847.7	14.1	13.1	132.29	425.4	-468.2	871.3	848.4	22.85	38.124		
4,100.0	4,030.5	4,001.6	3,943.3	14.5	13.5	132.25	435.7	-482.7	894.6	871.2	23.48	38.106		
4,200.0	4,128.5	4,098.8	4,038.9	14.9	13.9	132.21	446.0	-497.1	918.0	893.9	24.10	38.089		
4,300.0	4,226.5	4,196.0	4,134.5	15.3	14.2	132.17	456.3	-511.6	941.3	916.6	24.72	38.073		
4,400.0	4,324.4	4,293.3	4,230.1	15.7	14.6	132.13	466.6	-526.1	964.7	939.3	25.35	38.058		
4,500.0	4,422.4	4,390.5	4,325.7	16.1	14.9	132.10	477.0	-540.6	988.0	962.0	25.97	38.043		
4,600.0	4,520.3	4,487.7	4,421.3	16.5	15.3	132.07	487.3	-555.1	1,011.4	984.8	26.59	38.029		
4,700.0	4,618.3	4,585.0	4,516.9	16.8	15.6	132.03	497.6	-569.6	1,034.7	1,007.5	27.22	38.016		
4,800.0	4,716.3	4,682.2	4,612.5	17.2	16.0	132.00	507.9	-584.1	1,058.1	1,030.2	27.84	38.003		
4,900.0	4,814.2	4,779.4	4,708.0	17.6	16.4	131.98	518.2	-598.6	1,081.4	1,052.9	28.47	37.990		
5,000.0	4,912.2	4,876.7	4,803.6	18.0	16.7	131.95	528.6	-613.1	1,104.8	1,075.7	29.09	37.978		

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

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<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<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 #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Sec 6 T6S R96W (F06 696) - Chevron 6-38D - DD - Plan #2		Offset Site Error:		0.0 ft	
Survey Program:												0-MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation Factor					
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis						
5,100.0	5,010.2	4,973.9	4,899.2	18.4	17.1	131.92	538.9	-627.6	1,128.1	1,098.4	29.71	37.967					
5,200.0	5,108.1	5,071.1	4,994.8	18.8	17.4	131.90	549.2	-642.1	1,151.5	1,121.1	30.34	37.956					
5,300.0	5,206.1	5,168.4	5,090.4	19.2	17.8	131.87	559.5	-656.6	1,174.8	1,143.8	30.96	37.945					
5,400.0	5,304.1	5,265.6	5,186.0	19.6	18.1	131.85	569.8	-671.1	1,198.2	1,166.6	31.58	37.935					
5,500.0	5,402.0	5,362.8	5,281.6	20.0	18.5	131.83	580.2	-685.6	1,221.5	1,189.3	32.21	37.925 SF					

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<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Reference Site:</b>	Sec 6 T6S R96W (F06 696)	<b>MD Reference:</b>	KBE @ 8244.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Chevron 6-33D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
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Reference Depths are relative to KBE @ 8244.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Chevron 6-33D  
Coordinate System is US State Plane 1983, Colorado Central Zone  
Grid Convergence at Surface is: -1.67°

