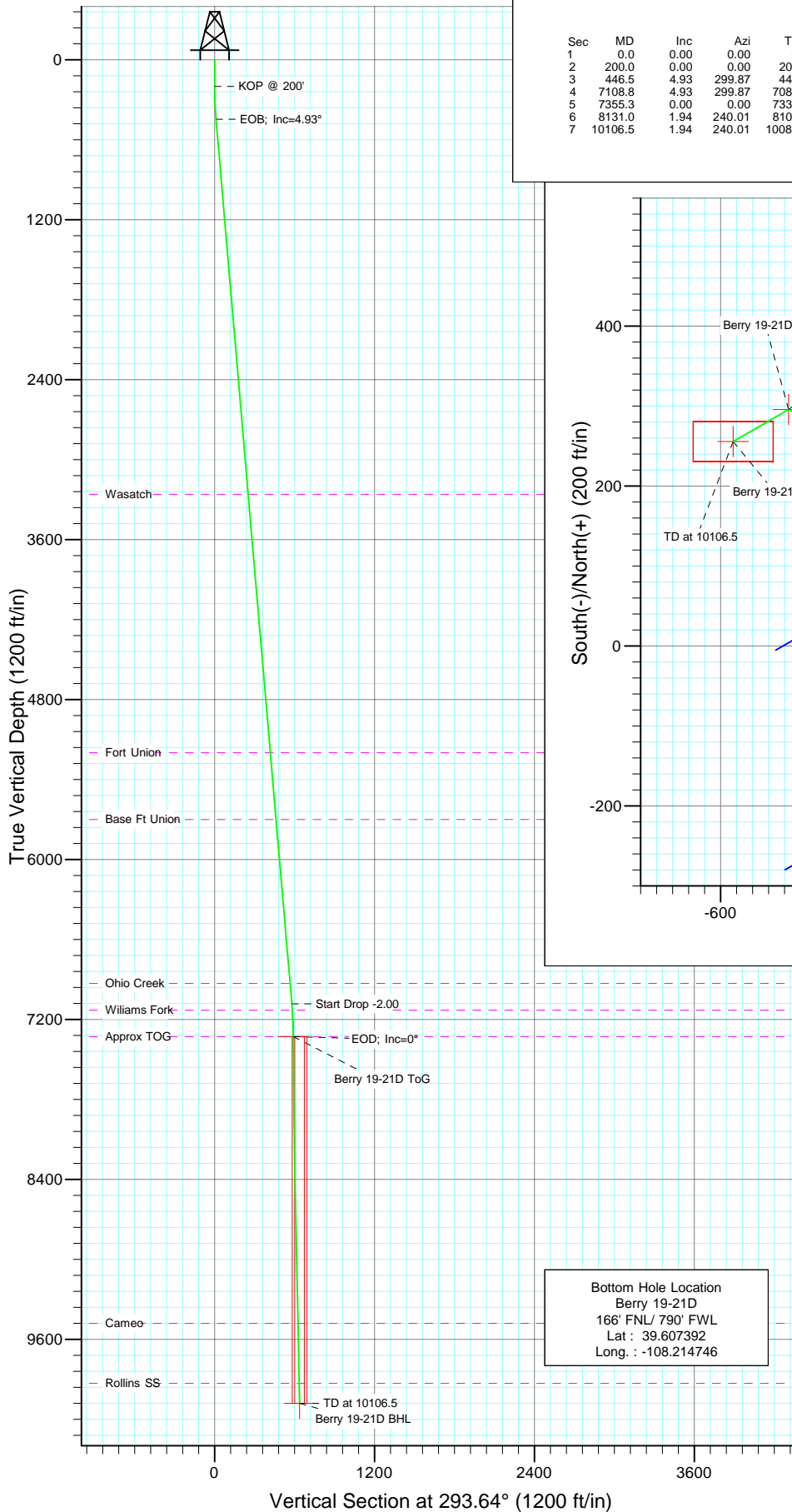
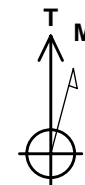
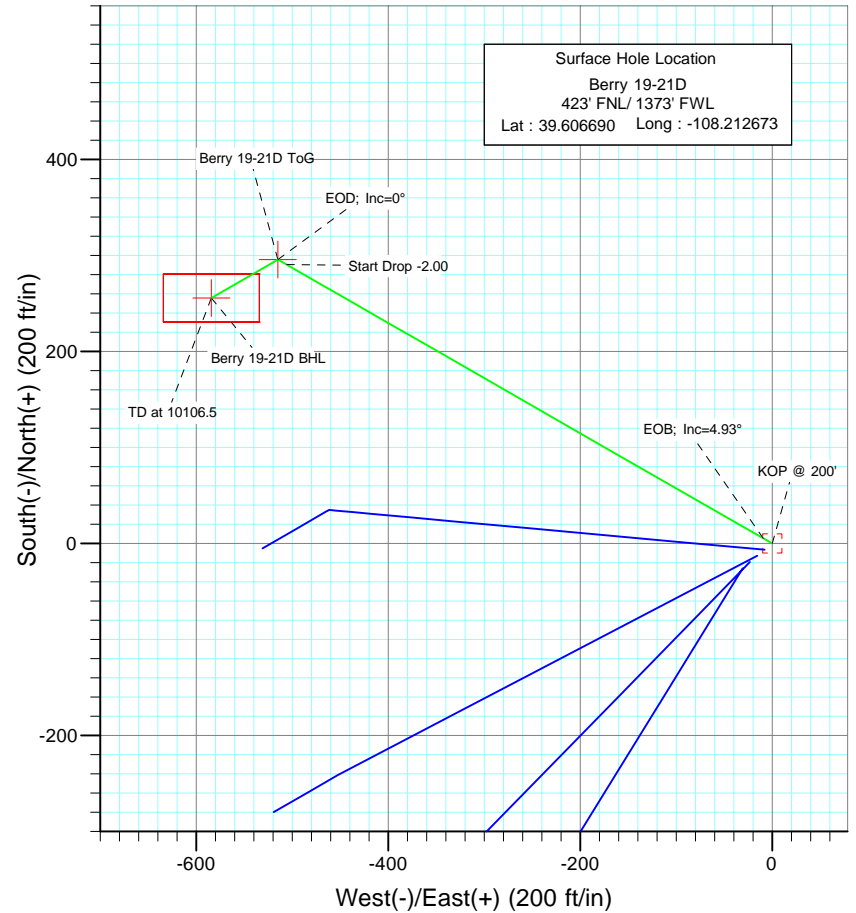




Project: Garfield County  
Site: NWNW Sec19 T5S R96W Chevron C19 596  
Well: Berry 19-21D  
Wellbore: DD  
Design: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	446.5	4.93	299.87	446.2	5.3	-9.2	2.00	299.87	10.5	
4	7108.8	4.93	299.87	7083.8	290.4	-505.6	0.00	0.00	579.6	
5	7355.3	0.00	0.00	7330.0	295.7	-514.8	2.00	180.00	590.2	Berry 19-21D ToG
6	8131.0	1.94	240.01	8105.6	289.1	-526.2	0.25	240.01	598.0	
7	10106.5	1.94	240.01	10080.0	255.7	-584.1	0.00	0.00	637.6	Berry 19-21D BHL



Azimuths to True North  
Magnetic North: 10.63°

Magnetic Field  
Strength: 52436.2snT  
Dip Angle: 65.84°  
Date: 12/31/2009  
Model: IGRF200510

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3260.0	3270.8	Wasatch
5200.0	5218.0	Fort Union
5700.0	5719.8	Base Ft Union
6930.0	6954.4	Ohio Creek
7130.0	7155.1	Williams Fork
7330.0	7355.3	Approx TOG
9480.0	9506.2	Cameo
9930.0	9956.4	Rollins SS

#### DESIGN DETAILS: Plan #1

95XXX; BH  
KBE @ 8553.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
Berry 19-21D BHL	293.64	Slot	0.0	0.0	0.0

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site:</b>	NWNW Sec19 T5S R96W Chevron C19 596	<b>North Reference:</b>	True
<b>Well:</b>	Berry 19-21D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

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

Site		NWNW Sec19 T5S R96W Chevron C19 596			
Site Position:		Northing:	1,657,278.89 ft	Latitude:	39.606690
From:	Lat/Long	Easting:	2,235,804.36 ft	Longitude:	-108.212673
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.71 °

Well	Berry 19-21D					
Well Position	+N/-S	0.0 ft	Northing:	1,657,278.89 ft	Latitude:	39.606690
	+E/-W	0.0 ft	Easting:	2,235,804.36 ft	Longitude:	-108.212673
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,538.0 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	12/31/2009	10.63	65.84	52,436

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	293.64

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
446.5	4.93	299.87	446.2	5.3	-9.2	2.00	2.00	0.00	299.87	
7,108.8	4.93	299.87	7,083.8	290.4	-505.6	0.00	0.00	0.00	0.00	
7,355.3	0.00	0.00	7,330.0	295.7	-514.8	2.00	-2.00	0.00	180.00	Berry 19-21D ToG
8,131.0	1.94	240.01	8,105.6	289.1	-526.2	0.25	0.25	-15.47	240.01	
10,106.5	1.94	240.01	10,080.0	255.7	-584.1	0.00	0.00	0.00	0.00	Berry 19-21D BHL

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site:</b>	NWNW Sec19 T5S R96W Chevron C19 596	<b>North Reference:</b>	True
<b>Well:</b>	Berry 19-21D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
30.0	0.00	0.00	30.0	0.0	0.0	0.0	0.00	0.00	
60.0	0.00	0.00	60.0	0.0	0.0	0.0	0.00	0.00	
90.0	0.00	0.00	90.0	0.0	0.0	0.0	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
210.0	0.20	299.87	210.0	0.0	0.0	0.0	2.00	2.00	
240.0	0.80	299.87	240.0	0.1	-0.2	0.3	2.00	2.00	
270.0	1.40	299.87	270.0	0.4	-0.7	0.9	2.00	2.00	
300.0	2.00	299.87	300.0	0.9	-1.5	1.7	2.00	2.00	
330.0	2.60	299.87	330.0	1.5	-2.6	2.9	2.00	2.00	
360.0	3.20	299.87	359.9	2.2	-3.9	4.4	2.00	2.00	
390.0	3.80	299.87	389.9	3.1	-5.5	6.3	2.00	2.00	
420.0	4.40	299.87	419.8	4.2	-7.3	8.4	2.00	2.00	
446.5	4.93	299.87	446.2	5.3	-9.2	10.5	2.00	2.00	EOB; Inc=4.93°
450.0	4.93	299.87	449.7	5.4	-9.5	10.8	0.00	0.00	
480.0	4.93	299.87	479.6	6.7	-11.7	13.4	0.00	0.00	
510.0	4.93	299.87	509.5	8.0	-13.9	16.0	0.00	0.00	
540.0	4.93	299.87	539.4	9.3	-16.2	18.5	0.00	0.00	
570.0	4.93	299.87	569.2	10.6	-18.4	21.1	0.00	0.00	
600.0	4.93	299.87	599.1	11.8	-20.6	23.6	0.00	0.00	
630.0	4.93	299.87	629.0	13.1	-22.9	26.2	0.00	0.00	
660.0	4.93	299.87	658.9	14.4	-25.1	28.8	0.00	0.00	
690.0	4.93	299.87	688.8	15.7	-27.3	31.3	0.00	0.00	
720.0	4.93	299.87	718.7	17.0	-29.6	33.9	0.00	0.00	
750.0	4.93	299.87	748.6	18.3	-31.8	36.5	0.00	0.00	
780.0	4.93	299.87	778.5	19.6	-34.0	39.0	0.00	0.00	
810.0	4.93	299.87	808.4	20.8	-36.3	41.6	0.00	0.00	
840.0	4.93	299.87	838.2	22.1	-38.5	44.1	0.00	0.00	
870.0	4.93	299.87	868.1	23.4	-40.7	46.7	0.00	0.00	
900.0	4.93	299.87	898.0	24.7	-43.0	49.3	0.00	0.00	
930.0	4.93	299.87	927.9	26.0	-45.2	51.8	0.00	0.00	
960.0	4.93	299.87	957.8	27.3	-47.5	54.4	0.00	0.00	
990.0	4.93	299.87	987.7	28.5	-49.7	57.0	0.00	0.00	
1,020.0	4.93	299.87	1,017.6	29.8	-51.9	59.5	0.00	0.00	
1,050.0	4.93	299.87	1,047.5	31.1	-54.2	62.1	0.00	0.00	
1,080.0	4.93	299.87	1,077.4	32.4	-56.4	64.7	0.00	0.00	
1,110.0	4.93	299.87	1,107.2	33.7	-58.6	67.2	0.00	0.00	
1,140.0	4.93	299.87	1,137.1	35.0	-60.9	69.8	0.00	0.00	
1,170.0	4.93	299.87	1,167.0	36.2	-63.1	72.3	0.00	0.00	
1,200.0	4.93	299.87	1,196.9	37.5	-65.3	74.9	0.00	0.00	
1,230.0	4.93	299.87	1,226.8	38.8	-67.6	77.5	0.00	0.00	
1,260.0	4.93	299.87	1,256.7	40.1	-69.8	80.0	0.00	0.00	
1,290.0	4.93	299.87	1,286.6	41.4	-72.0	82.6	0.00	0.00	
1,320.0	4.93	299.87	1,316.5	42.7	-74.3	85.2	0.00	0.00	
1,350.0	4.93	299.87	1,346.4	43.9	-76.5	87.7	0.00	0.00	
1,380.0	4.93	299.87	1,376.2	45.2	-78.7	90.3	0.00	0.00	
1,410.0	4.93	299.87	1,406.1	46.5	-81.0	92.8	0.00	0.00	
1,440.0	4.93	299.87	1,436.0	47.8	-83.2	95.4	0.00	0.00	
1,470.0	4.93	299.87	1,465.9	49.1	-85.5	98.0	0.00	0.00	

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site:</b>	NWNW Sec19 T5S R96W Chevron C19 596	<b>North Reference:</b>	True
<b>Well:</b>	Berry 19-21D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
1,500.0	4.93	299.87	1,495.8	50.4	-87.7	100.5	0.00	0.00	
1,530.0	4.93	299.87	1,525.7	51.7	-89.9	103.1	0.00	0.00	
1,560.0	4.93	299.87	1,555.6	52.9	-92.2	105.7	0.00	0.00	
1,590.0	4.93	299.87	1,585.5	54.2	-94.4	108.2	0.00	0.00	
1,620.0	4.93	299.87	1,615.4	55.5	-96.6	110.8	0.00	0.00	
1,650.0	4.93	299.87	1,645.2	56.8	-98.9	113.3	0.00	0.00	
1,680.0	4.93	299.87	1,675.1	58.1	-101.1	115.9	0.00	0.00	
1,710.0	4.93	299.87	1,705.0	59.4	-103.3	118.5	0.00	0.00	
1,740.0	4.93	299.87	1,734.9	60.6	-105.6	121.0	0.00	0.00	
1,770.0	4.93	299.87	1,764.8	61.9	-107.8	123.6	0.00	0.00	
1,800.0	4.93	299.87	1,794.7	63.2	-110.0	126.2	0.00	0.00	
1,830.0	4.93	299.87	1,824.6	64.5	-112.3	128.7	0.00	0.00	
1,860.0	4.93	299.87	1,854.5	65.8	-114.5	131.3	0.00	0.00	
1,890.0	4.93	299.87	1,884.4	67.1	-116.7	133.8	0.00	0.00	
1,920.0	4.93	299.87	1,914.2	68.3	-119.0	136.4	0.00	0.00	
1,950.0	4.93	299.87	1,944.1	69.6	-121.2	139.0	0.00	0.00	
1,980.0	4.93	299.87	1,974.0	70.9	-123.5	141.5	0.00	0.00	
2,010.0	4.93	299.87	2,003.9	72.2	-125.7	144.1	0.00	0.00	
2,040.0	4.93	299.87	2,033.8	73.5	-127.9	146.7	0.00	0.00	
2,070.0	4.93	299.87	2,063.7	74.8	-130.2	149.2	0.00	0.00	
2,100.0	4.93	299.87	2,093.6	76.0	-132.4	151.8	0.00	0.00	
2,130.0	4.93	299.87	2,123.5	77.3	-134.6	154.3	0.00	0.00	
2,160.0	4.93	299.87	2,153.4	78.6	-136.9	156.9	0.00	0.00	
2,190.0	4.93	299.87	2,183.2	79.9	-139.1	159.5	0.00	0.00	
2,220.0	4.93	299.87	2,213.1	81.2	-141.3	162.0	0.00	0.00	
2,250.0	4.93	299.87	2,243.0	82.5	-143.6	164.6	0.00	0.00	
2,280.0	4.93	299.87	2,272.9	83.8	-145.8	167.2	0.00	0.00	
2,310.0	4.93	299.87	2,302.8	85.0	-148.0	169.7	0.00	0.00	
2,340.0	4.93	299.87	2,332.7	86.3	-150.3	172.3	0.00	0.00	
2,370.0	4.93	299.87	2,362.6	87.6	-152.5	174.8	0.00	0.00	
2,400.0	4.93	299.87	2,392.5	88.9	-154.8	177.4	0.00	0.00	
2,430.0	4.93	299.87	2,422.4	90.2	-157.0	180.0	0.00	0.00	
2,460.0	4.93	299.87	2,452.2	91.5	-159.2	182.5	0.00	0.00	
2,490.0	4.93	299.87	2,482.1	92.7	-161.5	185.1	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									
Berry 19-21D ToG	0.00	0.00	7,330.0	295.7	-514.8	1,657,589.83	2,235,298.61	39.607502	-108.214500
- plan misses target center by 4865.0ft at 2490.0ft MD (2482.1 TVD, 92.7 N, -161.5 E)									
- Point									
Berry 19-21D BHL	0.00	0.00	10,080.0	255.7	-584.1	1,657,551.93	2,235,228.17	39.607392	-108.214746
- plan misses target center by 7611.4ft at 2490.0ft MD (2482.1 TVD, 92.7 N, -161.5 E)									
- Rectangle (sides W50.0 H100.0 D0.0)									

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site:</b>	NWNW Sec19 T5S R96W Chevron C19 596	<b>North Reference:</b>	True
<b>Well:</b>	Berry 19-21D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
2,500.0	4.93	299.87	2,492.1	93.2	-162.2	186.0	0.00	0.00	
2,600.0	4.93	299.87	2,591.7	97.4	-169.7	194.5	0.00	0.00	
2,700.0	4.93	299.87	2,691.4	101.7	-177.1	203.0	0.00	0.00	
2,800.0	4.93	299.87	2,791.0	106.0	-184.6	211.6	0.00	0.00	
2,900.0	4.93	299.87	2,890.6	110.3	-192.0	220.1	0.00	0.00	
3,000.0	4.93	299.87	2,990.3	114.6	-199.5	228.7	0.00	0.00	
3,100.0	4.93	299.87	3,089.9	118.8	-206.9	237.2	0.00	0.00	
3,200.0	4.93	299.87	3,189.5	123.1	-214.4	245.7	0.00	0.00	
3,270.8	4.93	299.87	3,260.0	126.2	-219.6	251.8	0.00	0.00	Wasatch
3,300.0	4.93	299.87	3,289.1	127.4	-221.8	254.3	0.00	0.00	
3,400.0	4.93	299.87	3,388.8	131.7	-229.3	262.8	0.00	0.00	
3,500.0	4.93	299.87	3,488.4	136.0	-236.7	271.4	0.00	0.00	
3,600.0	4.93	299.87	3,588.0	140.2	-244.2	279.9	0.00	0.00	
3,700.0	4.93	299.87	3,687.7	144.5	-251.6	288.5	0.00	0.00	
3,800.0	4.93	299.87	3,787.3	148.8	-259.1	297.0	0.00	0.00	
3,900.0	4.93	299.87	3,886.9	153.1	-266.5	305.5	0.00	0.00	
4,000.0	4.93	299.87	3,986.6	157.4	-274.0	314.1	0.00	0.00	
4,100.0	4.93	299.87	4,086.2	161.6	-281.4	322.6	0.00	0.00	
4,200.0	4.93	299.87	4,185.8	165.9	-288.9	331.2	0.00	0.00	
4,300.0	4.93	299.87	4,285.4	170.2	-296.3	339.7	0.00	0.00	
4,400.0	4.93	299.87	4,385.1	174.5	-303.8	348.3	0.00	0.00	
4,500.0	4.93	299.87	4,484.7	178.8	-311.2	356.8	0.00	0.00	
4,600.0	4.93	299.87	4,584.3	183.0	-318.7	365.3	0.00	0.00	
4,700.0	4.93	299.87	4,684.0	187.3	-326.1	373.9	0.00	0.00	
4,800.0	4.93	299.87	4,783.6	191.6	-333.6	382.4	0.00	0.00	
4,900.0	4.93	299.87	4,883.2	195.9	-341.0	391.0	0.00	0.00	
5,000.0	4.93	299.87	4,982.9	200.2	-348.5	399.5	0.00	0.00	
5,100.0	4.93	299.87	5,082.5	204.4	-355.9	408.0	0.00	0.00	
5,200.0	4.93	299.87	5,182.1	208.7	-363.4	416.6	0.00	0.00	
5,218.0	4.93	299.87	5,200.0	209.5	-364.7	418.1	0.00	0.00	Fort Union
5,300.0	4.93	299.87	5,281.7	213.0	-370.8	425.1	0.00	0.00	
5,400.0	4.93	299.87	5,381.4	217.3	-378.3	433.7	0.00	0.00	
5,500.0	4.93	299.87	5,481.0	221.6	-385.7	442.2	0.00	0.00	
5,600.0	4.93	299.87	5,580.6	225.8	-393.2	450.8	0.00	0.00	
5,700.0	4.93	299.87	5,680.3	230.1	-400.6	459.3	0.00	0.00	
5,719.8	4.93	299.87	5,700.0	231.0	-402.1	461.0	0.00	0.00	Base Ft Union
5,800.0	4.93	299.87	5,779.9	234.4	-408.1	467.8	0.00	0.00	
5,900.0	4.93	299.87	5,879.5	238.7	-415.5	476.4	0.00	0.00	
6,000.0	4.93	299.87	5,979.2	243.0	-423.0	484.9	0.00	0.00	
6,100.0	4.93	299.87	6,078.8	247.2	-430.4	493.5	0.00	0.00	
6,200.0	4.93	299.87	6,178.4	251.5	-437.9	502.0	0.00	0.00	
6,300.0	4.93	299.87	6,278.0	255.8	-445.3	510.6	0.00	0.00	
6,400.0	4.93	299.87	6,377.7	260.1	-452.8	519.1	0.00	0.00	
6,500.0	4.93	299.87	6,477.3	264.4	-460.3	527.6	0.00	0.00	
6,600.0	4.93	299.87	6,576.9	268.6	-467.7	536.2	0.00	0.00	
6,700.0	4.93	299.87	6,676.6	272.9	-475.2	544.7	0.00	0.00	
6,800.0	4.93	299.87	6,776.2	277.2	-482.6	553.3	0.00	0.00	
6,900.0	4.93	299.87	6,875.8	281.5	-490.1	561.8	0.00	0.00	
6,954.4	4.93	299.87	6,930.0	283.8	-494.1	566.5	0.00	0.00	Ohio Creek
7,000.0	4.93	299.87	6,975.5	285.8	-497.5	570.4	0.00	0.00	
7,100.0	4.93	299.87	7,075.1	290.0	-505.0	578.9	0.00	0.00	
7,108.8	4.93	299.87	7,083.8	290.4	-505.6	579.6	0.00	0.00	Start Drop -2.00

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site:</b>	NWNW Sec19 T5S R96W Chevron C19 596	<b>North Reference:</b>	True
<b>Well:</b>	Berry 19-21D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,155.1	4.00	299.87	7,130.0	292.2	-508.7	583.2	2.00	-2.00	Williams Fork
7,200.0	3.11	299.87	7,174.8	293.6	-511.2	586.0	2.00	-2.00	
7,300.0	1.11	299.87	7,274.8	295.4	-514.3	589.6	2.00	-2.00	
7,355.3	0.00	0.00	7,330.0	295.7	-514.8	590.2	2.00	-2.00	EOD; Inc=0° - Approx TOG - Berry 19-21D ToG
7,400.0	0.11	240.01	7,374.7	295.7	-514.8	590.2	0.25	0.25	
7,500.0	0.36	240.01	7,474.7	295.5	-515.2	590.4	0.25	0.25	
7,600.0	0.61	240.01	7,574.7	295.0	-515.9	591.0	0.25	0.25	
7,700.0	0.86	240.01	7,674.7	294.4	-517.0	591.7	0.25	0.25	
7,800.0	1.11	240.01	7,774.7	293.5	-518.5	592.7	0.25	0.25	
7,900.0	1.36	240.01	7,874.7	292.5	-520.4	594.0	0.25	0.25	
8,000.0	1.61	240.01	7,974.7	291.2	-522.7	595.6	0.25	0.25	
8,100.0	1.86	240.01	8,074.6	289.7	-525.3	597.4	0.25	0.25	
8,131.0	1.94	240.01	8,105.6	289.1	-526.2	598.0	0.25	0.25	
8,200.0	1.94	240.01	8,174.6	288.0	-528.2	599.3	0.00	0.00	
8,300.0	1.94	240.01	8,274.5	286.3	-531.1	601.4	0.00	0.00	
8,400.0	1.94	240.01	8,374.4	284.6	-534.1	603.4	0.00	0.00	
8,500.0	1.94	240.01	8,474.4	282.9	-537.0	605.4	0.00	0.00	
8,600.0	1.94	240.01	8,574.3	281.2	-539.9	607.4	0.00	0.00	
8,700.0	1.94	240.01	8,674.3	279.5	-542.8	609.4	0.00	0.00	
8,800.0	1.94	240.01	8,774.2	277.8	-545.8	611.4	0.00	0.00	
8,900.0	1.94	240.01	8,874.2	276.1	-548.7	613.4	0.00	0.00	
9,000.0	1.94	240.01	8,974.1	274.4	-551.6	615.4	0.00	0.00	
9,100.0	1.94	240.01	9,074.0	272.7	-554.6	617.4	0.00	0.00	
9,200.0	1.94	240.01	9,174.0	271.1	-557.5	619.4	0.00	0.00	
9,300.0	1.94	240.01	9,273.9	269.4	-560.4	621.4	0.00	0.00	
9,400.0	1.94	240.01	9,373.9	267.7	-563.4	623.4	0.00	0.00	
9,500.0	1.94	240.01	9,473.8	266.0	-566.3	625.4	0.00	0.00	
9,506.2	1.94	240.01	9,480.0	265.9	-566.5	625.6	0.00	0.00	Cameo
9,600.0	1.94	240.01	9,573.8	264.3	-569.2	627.4	0.00	0.00	
9,700.0	1.94	240.01	9,673.7	262.6	-572.2	629.4	0.00	0.00	
9,800.0	1.94	240.01	9,773.6	260.9	-575.1	631.5	0.00	0.00	
9,900.0	1.94	240.01	9,873.6	259.2	-578.0	633.5	0.00	0.00	
9,956.4	1.94	240.01	9,930.0	258.3	-579.7	634.6	0.00	0.00	Rollins SS
10,000.0	1.94	240.01	9,973.5	257.5	-581.0	635.5	0.00	0.00	
10,100.0	1.94	240.01	10,073.5	255.8	-583.9	637.5	0.00	0.00	
10,106.5	1.94	240.01	10,080.0	255.7	-584.1	637.6	0.00	0.00	TD at 10106.5 - Berry 19-21D BHL

### Targets

Target Name	- hit/miss target	- Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Berry 19-21D ToG			0.00	0.00	7,330.0	295.7	-514.8	1,657,589.83	2,235,298.61	39.607502	-108.214500
- plan hits target center											
- Point											
Berry 19-21D BHL			0.00	0.00	10,080.0	255.7	-584.1	1,657,551.93	2,235,228.17	39.607392	-108.214746
- plan hits target center											
- Rectangle (sides W50.0 H100.0 D0.0)											

# Directional Plus

## Planning Report

<b>Database:</b>	EDM 2003.21 US Multi User Db	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site:</b>	NWNW Sec19 T5S R96W Chevron C19 596	<b>North Reference:</b>	True
<b>Well:</b>	Berry 19-21D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,270.8	3,260.0	Wasatch		0.00		
5,218.0	5,200.0	Fort Union		0.00		
5,719.8	5,700.0	Base Ft Union		0.00		
6,954.4	6,930.0	Ohio Creek		0.00		
7,155.1	7,130.0	Williams Fork		0.00		
7,355.3	7,330.0	Approx TOG		0.00		
9,506.2	9,480.0	Cameo		0.00		
9,956.4	9,930.0	Rollins SS		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP @ 200'	
446.5	446.2	5.3	-9.2	EOB; Inc=4.93°	
7,108.8	7,083.8	290.4	-505.6	Start Drop -2.00	
7,355.3	7,330.0	295.7	-514.8	EOD; Inc=0°	
10,106.5	10,080.0	255.7	-584.1	TD at 10106.5	

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

**Garfield County  
Chevron C19 596  
Berry 19-21D  
DD  
Plan #1**

## **Anticollision Report**

**04 January, 2010**



# Directional Plus

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Reference Site:</b>	Chevron C19 596	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Berry 19-21D	<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 2003.21 US Multi User Db
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 200.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	1/4/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	10,106.5	Plan #1 (DD)	MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Chevron C19 596						
Berry 19-17D - DD - Plan #1	338.2	337.7	39.4	38.2	34.613	CC, ES
Berry 19-17D - DD - Plan #1	600.0	594.2	54.0	51.8	25.210	SF
Berry 19-18D - DD - Plan #1	417.0	416.7	28.4	27.0	19.804	CC, ES
Berry 19-18D - DD - Plan #1	600.0	597.2	36.8	34.6	17.191	SF
Berry 19-19D - DD - Plan #1	401.6	401.4	18.8	17.4	13.665	CC, ES
Berry 19-19D - DD - Plan #1	500.0	499.5	20.5	18.7	11.719	SF
Berry 19-20D - DD - Plan #1	343.1	343.0	9.6	8.5	8.312	CC, ES
Berry 19-20D - DD - Plan #1	400.0	399.8	10.2	8.8	7.474	SF

# Directional Plus

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Reference Site:</b>	Chevron C19 596	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Berry 19-21D	<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 2003.21 US Multi User Db
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Chevron C19 596 - Berry 19-17D - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-130.11	-25.9	-30.7	40.2					
100.0	100.0	100.0	100.0	0.1	0.1	-130.11	-25.9	-30.7	40.2	39.9	0.30	135.329		
200.0	200.0	200.0	200.0	0.3	0.3	-130.11	-25.9	-30.7	40.2	39.5	0.65	62.178		
300.0	300.0	300.0	300.0	0.5	0.5	-72.36	-25.9	-30.7	39.6	38.6	1.00	39.663		
338.2	338.2	337.7	337.7	0.6	0.6	-74.64	-26.1	-30.8	39.4	38.2	1.14	34.613 CC, ES		
400.0	399.8	398.5	398.5	0.7	0.7	-80.07	-27.3	-31.6	40.0	38.7	1.37	29.323		
500.0	499.5	496.6	496.4	0.9	0.9	-91.26	-31.6	-34.2	44.6	42.8	1.75	25.474		
600.0	599.1	594.2	593.7	1.1	1.1	-99.76	-38.7	-38.6	54.0	51.8	2.14	25.210 SF		
700.0	698.8	691.9	690.7	1.4	1.3	-104.86	-48.5	-44.7	67.2	64.7	2.53	26.521		
800.0	798.4	790.7	788.8	1.6	1.6	-108.13	-59.1	-51.2	81.6	78.7	2.94	27.782		
900.0	898.0	889.6	886.8	1.8	1.8	-110.41	-69.7	-57.7	96.2	92.9	3.35	28.754		
1,000.0	997.6	988.5	984.9	2.0	2.1	-112.08	-80.3	-64.2	110.9	107.1	3.76	29.515		
1,100.0	1,097.3	1,087.4	1,083.0	2.3	2.4	-113.37	-90.9	-70.7	125.6	121.5	4.17	30.123		
1,200.0	1,196.9	1,186.2	1,181.1	2.5	2.6	-114.38	-101.5	-77.3	140.4	135.9	4.59	30.617		
1,300.0	1,296.5	1,285.1	1,279.2	2.7	2.9	-115.20	-112.1	-83.8	155.3	150.3	5.01	31.026		
1,400.0	1,396.2	1,384.0	1,377.3	2.9	3.2	-115.88	-122.7	-90.3	170.2	164.7	5.42	31.368		
1,500.0	1,495.8	1,482.8	1,475.3	3.2	3.4	-116.45	-133.3	-96.8	185.0	179.2	5.84	31.660		
1,600.0	1,595.4	1,581.7	1,573.4	3.4	3.7	-116.94	-143.9	-103.3	199.9	193.7	6.27	31.910		

# Directional Plus

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Reference Site:</b>	Chevron C19 596	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Berry 19-21D	<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 2003.21 US Multi User Db
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chevron C19 596 - Berry 19-18D - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-129.89	-19.3	-23.1	30.1					
100.0	100.0	100.0	100.0	0.1	0.1	-129.89	-19.3	-23.1	30.1	29.8	0.30	101.484		
200.0	200.0	200.0	200.0	0.3	0.3	-129.89	-19.3	-23.1	30.1	29.5	0.65	46.628		
300.0	300.0	300.0	300.0	0.5	0.5	-72.95	-19.3	-23.1	29.6	28.6	1.00	29.607		
400.0	399.8	399.8	399.8	0.7	0.7	-83.08	-19.3	-23.1	28.5	27.1	1.37	20.809		
417.0	416.8	416.7	416.7	0.7	0.7	-85.47	-19.3	-23.1	28.4	27.0	1.43	19.804	CC, ES	
500.0	499.5	498.6	498.5	0.9	0.8	-98.11	-20.5	-24.3	30.2	28.5	1.75	17.244		
600.0	599.1	597.2	597.0	1.1	1.0	-108.21	-24.2	-27.8	36.8	34.6	2.14	17.191	SF	
700.0	698.8	695.6	695.1	1.4	1.2	-112.48	-30.2	-33.7	46.8	44.3	2.54	18.456		
800.0	798.4	794.9	793.9	1.6	1.5	-114.39	-37.3	-40.6	58.1	55.1	2.94	19.725		
900.0	898.0	894.3	892.8	1.8	1.7	-115.69	-44.3	-47.5	69.4	66.0	3.36	20.667		
1,000.0	997.6	993.6	991.6	2.0	1.9	-116.62	-51.4	-54.4	80.7	76.9	3.77	21.388		
1,100.0	1,097.3	1,093.0	1,090.5	2.3	2.1	-117.32	-58.4	-61.3	92.0	87.8	4.19	21.957		
1,200.0	1,196.9	1,192.3	1,189.4	2.5	2.4	-117.87	-65.5	-68.2	103.3	98.7	4.61	22.414		
1,300.0	1,296.5	1,291.7	1,288.2	2.7	2.6	-118.31	-72.6	-75.1	114.7	109.7	5.03	22.790		
1,400.0	1,396.2	1,391.0	1,387.1	2.9	2.9	-118.67	-79.6	-82.0	126.0	120.6	5.46	23.104		
1,500.0	1,495.8	1,490.4	1,485.9	3.2	3.1	-118.97	-86.7	-88.9	137.4	131.5	5.88	23.370		
1,600.0	1,595.4	1,589.7	1,584.8	3.4	3.3	-119.23	-93.7	-95.8	148.8	142.5	6.30	23.598		
1,700.0	1,695.1	1,689.1	1,683.6	3.6	3.6	-119.44	-100.8	-102.7	160.1	153.4	6.73	23.795		
1,800.0	1,794.7	1,788.4	1,782.5	3.9	3.8	-119.63	-107.9	-109.6	171.5	164.3	7.16	23.967		
1,900.0	1,894.3	1,887.8	1,881.4	4.1	4.1	-119.80	-114.9	-116.5	182.9	175.3	7.58	24.119		
2,000.0	1,993.9	1,987.1	1,980.2	4.3	4.3	-119.95	-122.0	-123.4	194.2	186.2	8.01	24.254		

# Directional Plus

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Reference Site:</b>	Chevron C19 596	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Berry 19-21D	<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 2003.21 US Multi User Db
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chevron C19 596 - Berry 19-19D - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-129.45	-12.8	-15.5	20.1					
100.0	100.0	100.0	100.0	0.1	0.1	-129.45	-12.8	-15.5	20.1	19.8	0.30	67.641		
200.0	200.0	200.0	200.0	0.3	0.3	-129.45	-12.8	-15.5	20.1	19.4	0.65	31.079		
300.0	300.0	300.0	300.0	0.5	0.5	-74.13	-12.8	-15.5	19.5	18.5	1.00	19.557		
400.0	399.8	399.8	399.8	0.7	0.7	-89.67	-12.8	-15.5	18.8	17.4	1.37	13.726		
401.6	401.4	401.4	401.4	0.7	0.7	-90.01	-12.8	-15.5	18.8	17.4	1.37	13.665 CC, ES		
500.0	499.5	499.5	499.5	0.9	0.8	-113.28	-12.8	-15.5	20.5	18.7	1.75	11.719 SF		
600.0	599.1	598.9	598.8	1.1	1.0	-127.84	-13.5	-17.0	25.7	23.5	2.11	12.159		
700.0	698.8	698.3	698.1	1.4	1.2	-131.16	-15.9	-21.6	32.7	30.2	2.49	13.135		
800.0	798.4	797.9	797.5	1.6	1.4	-130.28	-19.3	-28.1	40.4	37.6	2.89	13.988		
900.0	898.0	897.6	896.9	1.8	1.6	-129.64	-22.8	-34.6	48.2	44.9	3.30	14.611		
1,000.0	997.6	997.3	996.4	2.0	1.8	-129.18	-26.2	-41.2	55.9	52.2	3.71	15.082		
1,100.0	1,097.3	1,097.0	1,095.8	2.3	2.0	-128.83	-29.6	-47.8	63.7	59.6	4.12	15.450		
1,200.0	1,196.9	1,196.7	1,195.2	2.5	2.2	-128.56	-33.0	-54.3	71.4	66.9	4.54	15.745		
1,300.0	1,296.5	1,296.4	1,294.6	2.7	2.4	-128.34	-36.5	-60.9	79.2	74.2	4.95	15.985		
1,400.0	1,396.2	1,396.1	1,394.1	2.9	2.6	-128.16	-39.9	-67.4	87.0	81.6	5.37	16.185		
1,500.0	1,495.8	1,495.8	1,493.5	3.2	2.9	-128.01	-43.3	-74.0	94.7	88.9	5.79	16.354		
1,600.0	1,595.4	1,595.5	1,592.9	3.4	3.1	-127.88	-46.7	-80.5	102.5	96.3	6.21	16.498		
1,700.0	1,695.1	1,695.2	1,692.3	3.6	3.3	-127.77	-50.2	-87.1	110.2	103.6	6.63	16.623		
1,800.0	1,794.7	1,794.9	1,791.7	3.9	3.5	-127.67	-53.6	-93.6	118.0	110.9	7.05	16.732		
1,900.0	1,894.3	1,894.6	1,891.2	4.1	3.7	-127.59	-57.0	-100.2	125.8	118.3	7.47	16.828		
2,000.0	1,993.9	1,994.3	1,990.6	4.3	3.9	-127.51	-60.5	-106.7	133.5	125.6	7.89	16.912		
2,100.0	2,093.6	2,094.0	2,090.0	4.6	4.1	-127.45	-63.9	-113.3	141.3	133.0	8.32	16.988		
2,200.0	2,193.2	2,193.7	2,189.4	4.8	4.4	-127.39	-67.3	-119.8	149.0	140.3	8.74	17.056		
2,300.0	2,292.8	2,293.4	2,288.9	5.0	4.6	-127.33	-70.7	-126.4	156.8	147.6	9.16	17.118		
2,400.0	2,392.5	2,393.1	2,388.3	5.2	4.8	-127.29	-74.2	-133.0	164.6	155.0	9.58	17.173		
2,500.0	2,492.1	2,492.8	2,487.7	5.5	5.0	-127.24	-77.6	-139.5	172.3	162.3	10.00	17.224		
2,600.0	2,591.7	2,592.5	2,587.1	5.7	5.2	-127.20	-81.0	-146.1	180.1	169.6	10.43	17.271		
2,700.0	2,691.4	2,692.2	2,686.6	5.9	5.4	-127.16	-84.4	-152.6	187.8	177.0	10.85	17.313		
2,800.0	2,791.0	2,791.9	2,786.0	6.2	5.6	-127.13	-87.9	-159.2	195.6	184.3	11.27	17.353		

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<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Reference Site:</b>	Chevron C19 596	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Berry 19-21D	<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 2003.21 US Multi User Db
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Chevron C19 596 - Berry 19-20D - DD - Plan #1													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	-129.75	-6.6	-7.9	10.3					
100.0	100.0	100.0	100.0	0.1	0.1	-129.75	-6.6	-7.9	10.3	10.0	0.30	34.583		
200.0	200.0	200.0	200.0	0.3	0.3	-129.75	-6.6	-7.9	10.3	9.6	0.65	15.889		
300.0	300.0	300.0	300.0	0.5	0.5	-79.25	-6.6	-7.9	9.8	8.8	1.00	9.807		
343.1	343.0	343.0	343.0	0.6	0.6	-90.00	-6.6	-7.9	9.6	8.5	1.16	8.312 CC, ES		
400.0	399.8	399.8	399.8	0.7	0.7	-109.45	-6.6	-7.9	10.2	8.8	1.37	7.474 SF		
500.0	499.5	499.5	499.5	0.9	0.8	-140.29	-6.6	-7.9	15.1	13.4	1.72	8.788		
600.0	599.1	599.1	599.1	1.1	1.0	-154.47	-6.6	-7.9	22.4	20.3	2.06	10.872		
700.0	698.8	699.5	699.5	1.4	1.2	-159.19	-6.4	-9.6	29.1	26.7	2.41	12.096		
800.0	798.4	800.2	800.0	1.6	1.4	-158.03	-5.9	-14.8	33.5	30.7	2.78	12.078		
900.0	898.0	900.1	899.7	1.8	1.6	-155.14	-5.3	-21.8	36.7	33.6	3.15	11.652		
1,000.0	997.6	1,000.0	999.4	2.0	1.8	-152.71	-4.7	-28.7	40.0	36.5	3.54	11.315		
1,100.0	1,097.3	1,100.0	1,099.1	2.3	2.0	-150.66	-4.0	-35.7	43.4	39.5	3.93	11.043		
1,200.0	1,196.9	1,199.9	1,198.8	2.5	2.2	-148.90	-3.4	-42.6	46.8	42.5	4.33	10.819		
1,300.0	1,296.5	1,299.8	1,298.4	2.7	2.4	-147.39	-2.7	-49.6	50.3	45.5	4.73	10.632		
1,400.0	1,396.2	1,399.8	1,398.1	2.9	2.6	-146.07	-2.1	-56.5	53.8	48.6	5.13	10.473		
1,500.0	1,495.8	1,499.7	1,497.8	3.2	2.8	-144.91	-1.5	-63.5	57.3	51.7	5.54	10.337		
1,600.0	1,595.4	1,599.6	1,597.5	3.4	3.0	-143.88	-0.8	-70.4	60.8	54.8	5.95	10.220		
1,700.0	1,695.1	1,699.6	1,697.2	3.6	3.2	-142.97	-0.2	-77.4	64.3	58.0	6.36	10.117		
1,800.0	1,794.7	1,799.5	1,796.9	3.9	3.4	-142.15	0.4	-84.3	67.9	61.1	6.77	10.027		
1,900.0	1,894.3	1,899.4	1,896.6	4.1	3.6	-141.42	1.1	-91.3	71.5	64.3	7.18	9.948		
2,000.0	1,993.9	1,999.3	1,996.3	4.3	3.8	-140.75	1.7	-98.2	75.0	67.4	7.60	9.877		
2,100.0	2,093.6	2,099.3	2,095.9	4.6	4.0	-140.15	2.3	-105.2	78.6	70.6	8.01	9.813		
2,200.0	2,193.2	2,199.2	2,195.6	4.8	4.3	-139.60	3.0	-112.1	82.2	73.8	8.43	9.756		
2,300.0	2,292.8	2,299.1	2,295.3	5.0	4.5	-139.09	3.6	-119.0	85.8	77.0	8.84	9.705		
2,400.0	2,392.5	2,399.1	2,395.0	5.2	4.7	-138.63	4.2	-126.0	89.4	80.2	9.26	9.658		
2,500.0	2,492.1	2,499.0	2,494.7	5.5	4.9	-138.20	4.9	-132.9	93.0	83.4	9.68	9.615		
2,600.0	2,591.7	2,598.9	2,594.4	5.7	5.1	-137.80	5.5	-139.9	96.7	86.6	10.10	9.576		
2,700.0	2,691.4	2,698.9	2,694.1	5.9	5.3	-137.43	6.2	-146.8	100.3	89.8	10.51	9.540		
2,800.0	2,791.0	2,798.8	2,793.8	6.2	5.5	-137.09	6.8	-153.8	103.9	93.0	10.93	9.506		
2,900.0	2,890.6	2,898.7	2,893.5	6.4	5.7	-136.77	7.4	-160.7	107.6	96.2	11.35	9.476		
3,000.0	2,990.3	2,998.7	2,993.1	6.6	5.9	-136.47	8.1	-167.7	111.2	99.4	11.77	9.447		
3,100.0	3,089.9	3,098.6	3,092.8	6.9	6.2	-136.19	8.7	-174.6	114.8	102.6	12.19	9.421		
3,200.0	3,189.5	3,198.5	3,192.5	7.1	6.4	-135.93	9.3	-181.6	118.5	105.9	12.61	9.396		
3,300.0	3,289.1	3,298.5	3,292.2	7.3	6.6	-135.69	10.0	-188.5	122.1	109.1	13.03	9.373		
3,400.0	3,388.8	3,398.4	3,391.9	7.5	6.8	-135.45	10.6	-195.5	125.8	112.3	13.45	9.351		
3,500.0	3,488.4	3,498.3	3,491.6	7.8	7.0	-135.23	11.2	-202.4	129.4	115.5	13.87	9.331		
3,600.0	3,588.0	3,598.3	3,591.3	8.0	7.2	-135.03	11.9	-209.3	133.1	118.8	14.29	9.312		
3,700.0	3,687.7	3,698.2	3,691.0	8.2	7.4	-134.83	12.5	-216.3	136.7	122.0	14.71	9.294		
3,800.0	3,787.3	3,798.1	3,790.7	8.5	7.6	-134.64	13.1	-223.2	140.4	125.2	15.13	9.278		
3,900.0	3,886.9	3,898.1	3,890.3	8.7	7.9	-134.47	13.8	-230.2	144.0	128.5	15.55	9.262		
4,000.0	3,986.6	3,998.0	3,990.0	8.9	8.1	-134.30	14.4	-237.1	147.7	131.7	15.97	9.247		
4,100.0	4,086.2	4,097.9	4,089.7	9.2	8.3	-134.14	15.0	-244.1	151.3	134.9	16.39	9.232		
4,200.0	4,185.8	4,197.9	4,189.4	9.4	8.5	-133.99	15.7	-251.0	155.0	138.2	16.81	9.219		
4,300.0	4,285.4	4,297.8	4,289.1	9.6	8.7	-133.84	16.3	-258.0	158.6	141.4	17.23	9.206		
4,400.0	4,385.1	4,397.7	4,388.8	9.8	8.9	-133.71	17.0	-264.9	162.3	144.6	17.65	9.194		
4,500.0	4,484.7	4,497.7	4,488.5	10.1	9.1	-133.57	17.6	-271.9	166.0	147.9	18.07	9.182		
4,600.0	4,584.3	4,597.6	4,588.2	10.3	9.3	-133.45	18.2	-278.8	169.6	151.1	18.49	9.171		
4,700.0	4,684.0	4,697.5	4,687.9	10.5	9.6	-133.32	18.9	-285.8	173.3	154.4	18.92	9.160		
4,800.0	4,783.6	4,797.5	4,787.5	10.8	9.8	-133.21	19.5	-292.7	176.9	157.6	19.34	9.150		
4,900.0	4,883.2	4,897.4	4,887.2	11.0	10.0	-133.10	20.1	-299.6	180.6	160.8	19.76	9.141		
5,000.0	4,982.9	4,997.3	4,986.9	11.2	10.2	-132.99	20.8	-306.6	184.3	164.1	20.18	9.132		

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

# Directional Plus

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Reference Site:</b>	Chevron C19 596	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Berry 19-21D	<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 2003.21 US Multi User Db
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Chevron C19 596 - Berry 19-20D - DD - Plan #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)				
5,100.0	5,082.5	5,097.2	5,086.6	11.5	10.4	-132.89	21.4	-313.5	187.9	167.3	20.60	9.123		
5,200.0	5,182.1	5,197.2	5,186.3	11.7	10.6	-132.79	22.0	-320.5	191.6	170.6	21.02	9.114		
5,300.0	5,281.7	5,297.1	5,286.0	11.9	10.8	-132.69	22.7	-327.4	195.3	173.8	21.44	9.106		
5,400.0	5,381.4	5,397.0	5,385.7	12.2	11.0	-132.60	23.3	-334.4	198.9	177.1	21.86	9.098		

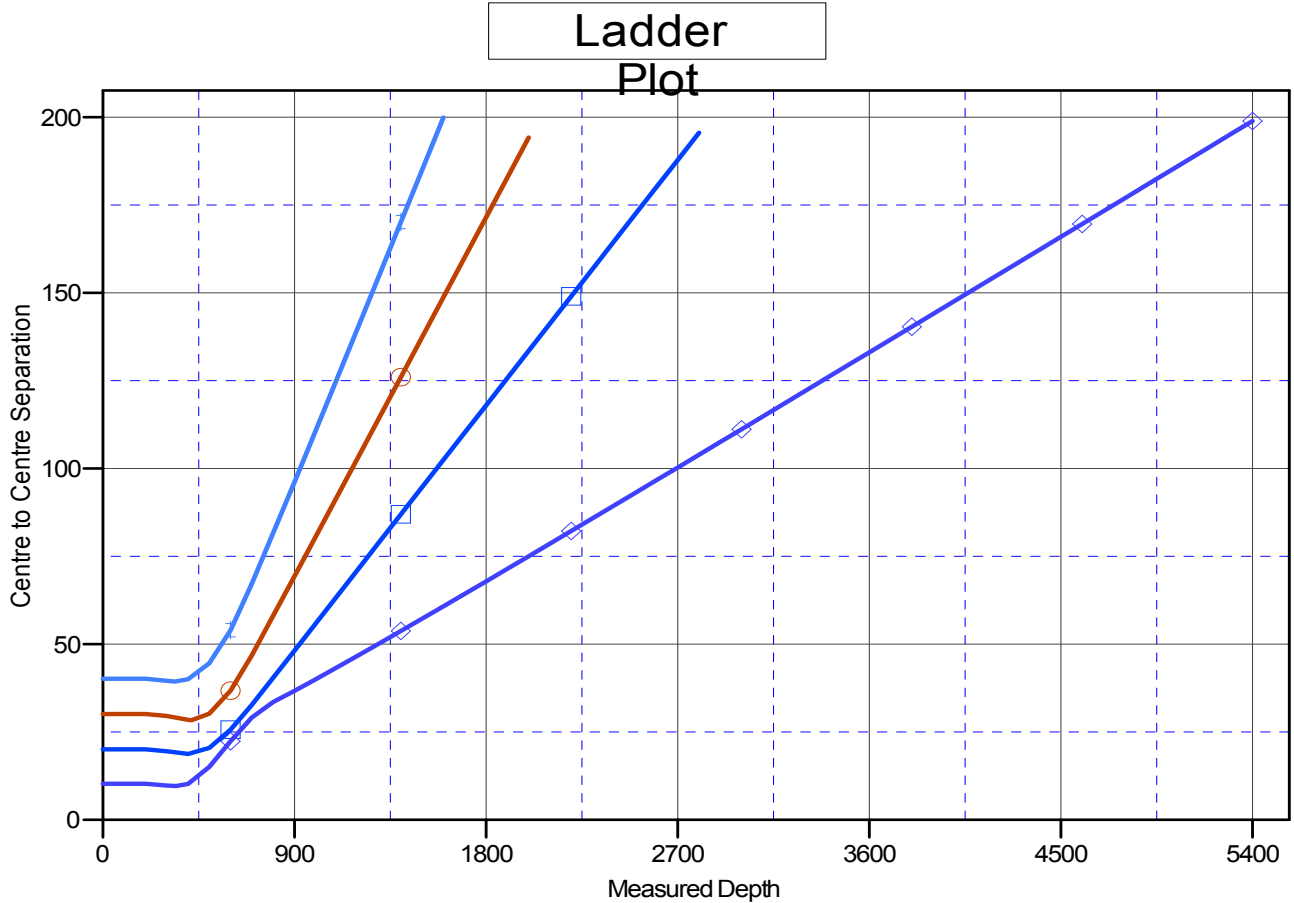
# Directional Plus

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well Berry 19-21D
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Reference Site:</b>	Chevron C19 596	<b>MD Reference:</b>	KBE @ 8553.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Berry 19-21D	<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 2003.21 US Multi User Db
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KBE @ 8553.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Berry 19-21D  
Coordinate System is US State Plane 1983, Colorado Central Zone  
Grid Convergence at Surface is: -1.71°



### LEGEND

- Berry 19-17D, DD, Plan #1 V0
- Berry 19-19D, DD, Plan #1 V0
- Berry 19-18D, DD, Plan #1 V0
- Berry 19-20D, DD, Plan #1 V0