

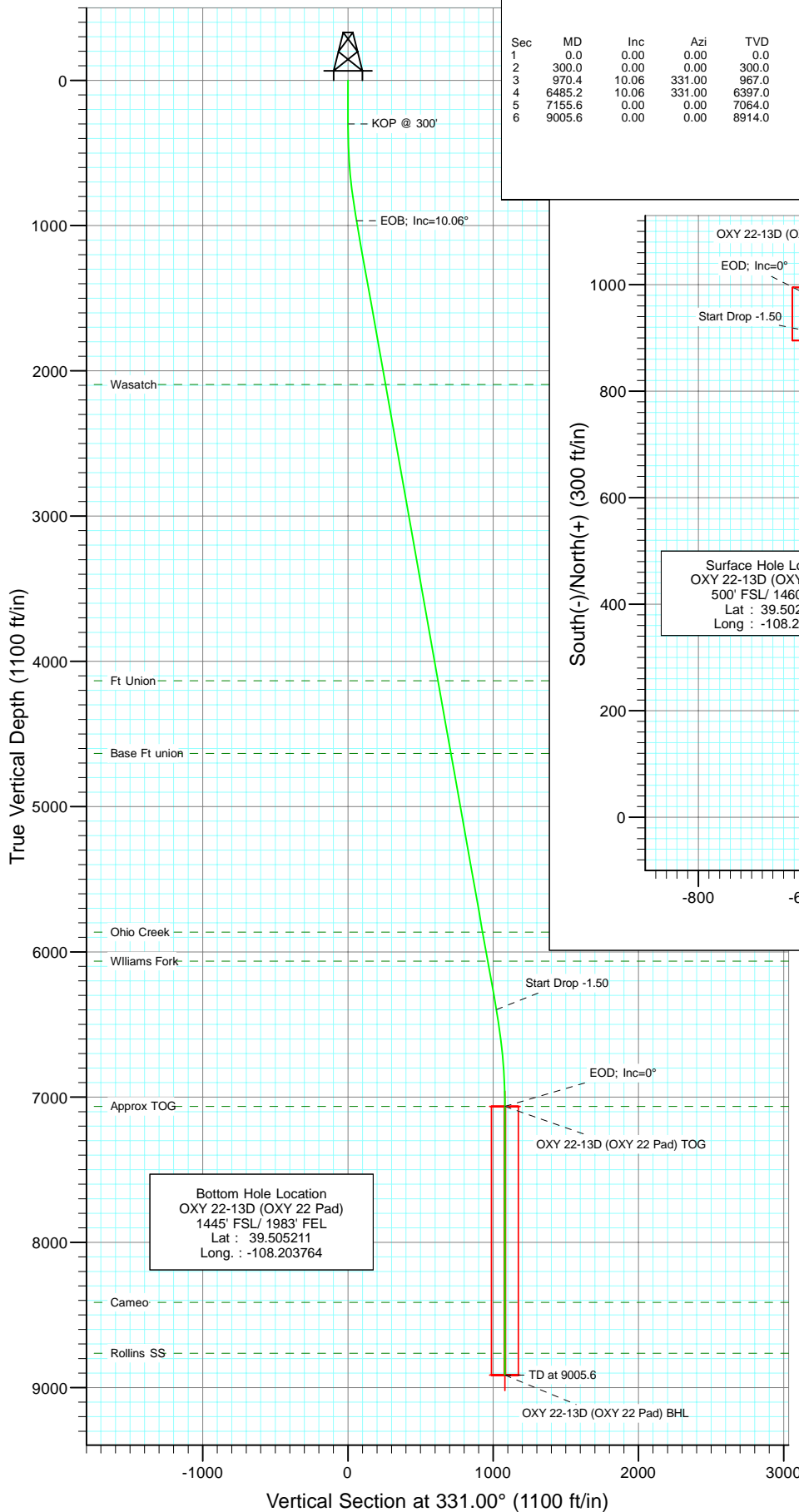


Berry Petroleum Company

Project: Garfield County  
Site: SWSE S22-T6S-R97W  
Well: OXY 22-13D (OXY 22 Pad)  
Wellbore: DD  
Design: Plan #1

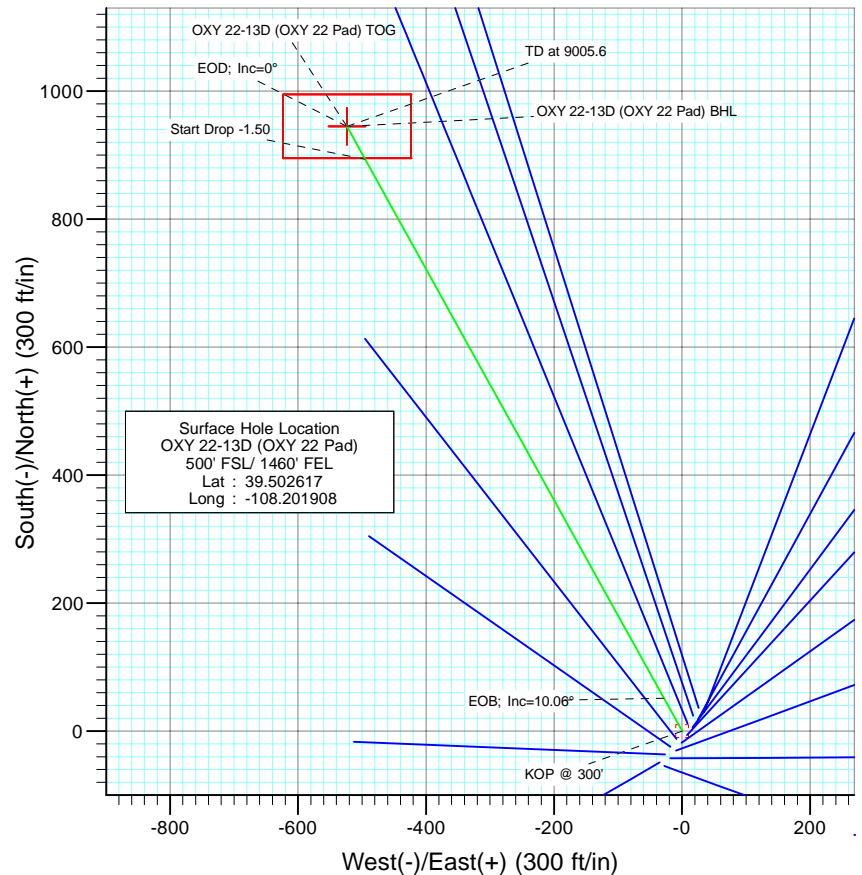


CATHEDRAL



#### 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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	970.4	10.06	331.00	967.0	51.3	-28.4	1.50	331.00	58.7	
4	6485.2	10.06	331.00	6397.0	893.5	-495.3	0.00	0.00	1021.6	
5	7155.6	0.00	0.00	7064.0	944.9	-523.7	1.50	180.00	1080.3	OXY 22-13D (OXY 22 Pad) TOG
6	9005.6	0.00	0.00	8914.0	944.9	-523.7	0.00	0.00	1080.3	OXY 22-13D (OXY 22 Pad) BHL



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2094.0	2115.0	Wasatch
4134.0	4186.8	Ft Union
4634.0	4694.6	Base Ft union
5864.0	5943.8	Ohio Creek
6064.0	6147.0	Williams Fork
7064.0	7155.6	Approx TOG
8414.0	8505.6	Cameo
8764.0	8855.6	Rollins SS



Azimuths to True North  
Magnetic North: 10.64°

Magnetic Field  
Strength: 52406.0snT  
Dip Angle: 65.76°  
Date: 9/29/2009  
Model: IGRF200510

#### DESIGN DETAILS: Plan #1

95XXX; BH  
KBE @ 8506.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
OXY 22-13D (OXY 22 Pad) BHL	331.00	Slot	0.0	0.0	0.0

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-13D (OXY 22 Pad)	<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		SWSE S22-T6S-R97W			
Site Position:		Northing:	1,619,243.22 ft	Latitude:	39.502467
From:	Lat/Long	Easting:	2,237,679.58 ft	Longitude:	-108.202006
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.70 °

Well	OXY 22-13D (OXY 22 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,619,297.00 ft	Latitude:	39.502617
	+E/-W	0.0 ft	Easting:	2,237,708.84 ft	Longitude:	-108.201908
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,491.0 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	9/29/2009	10.64	65.76	52,406

<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	331.00

<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	
970.4	10.06	331.00	967.0	51.3	-28.4	1.50	1.50	0.00	331.00	
6,485.2	10.06	331.00	6,397.0	893.5	-495.3	0.00	0.00	0.00	0.00	
7,155.6	0.00	0.00	7,064.0	944.9	-523.7	1.50	-1.50	0.00	180.00	OXY 22-13D (OXY 22
9,005.6	0.00	0.00	8,914.0	944.9	-523.7	0.00	0.00	0.00	0.00	OXY 22-13D (OXY 22

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-13D (OXY 22 Pad)	<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	
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'
330.0	0.45	331.00	330.0	0.1	-0.1	0.1	1.50	1.50	
360.0	0.90	331.00	360.0	0.4	-0.2	0.5	1.50	1.50	
390.0	1.35	331.00	390.0	0.9	-0.5	1.1	1.50	1.50	
420.0	1.80	331.00	420.0	1.6	-0.9	1.9	1.50	1.50	
450.0	2.25	331.00	450.0	2.6	-1.4	2.9	1.50	1.50	
480.0	2.70	331.00	479.9	3.7	-2.1	4.2	1.50	1.50	
510.0	3.15	331.00	509.9	5.0	-2.8	5.8	1.50	1.50	
540.0	3.60	331.00	539.8	6.6	-3.7	7.5	1.50	1.50	
570.0	4.05	331.00	569.8	8.3	-4.6	9.5	1.50	1.50	
600.0	4.50	331.00	599.7	10.3	-5.7	11.8	1.50	1.50	
630.0	4.95	331.00	629.6	12.5	-6.9	14.2	1.50	1.50	
660.0	5.40	331.00	659.5	14.8	-8.2	17.0	1.50	1.50	
690.0	5.85	331.00	689.3	17.4	-9.6	19.9	1.50	1.50	
720.0	6.30	331.00	719.2	20.2	-11.2	23.1	1.50	1.50	
750.0	6.75	331.00	749.0	23.2	-12.8	26.5	1.50	1.50	
780.0	7.20	331.00	778.7	26.3	-14.6	30.1	1.50	1.50	
810.0	7.65	331.00	808.5	29.7	-16.5	34.0	1.50	1.50	
840.0	8.10	331.00	838.2	33.3	-18.5	38.1	1.50	1.50	
870.0	8.55	331.00	867.9	37.1	-20.6	42.5	1.50	1.50	
900.0	9.00	331.00	897.5	41.1	-22.8	47.0	1.50	1.50	
930.0	9.45	331.00	927.1	45.3	-25.1	51.8	1.50	1.50	
960.0	9.90	331.00	956.7	49.7	-27.6	56.9	1.50	1.50	
970.4	10.06	331.00	967.0	51.3	-28.4	58.7	1.50	1.50	EOB; Inc=10.06°
990.0	10.06	331.00	986.3	54.3	-30.1	62.1	0.00	0.00	
1,020.0	10.06	331.00	1,015.8	58.9	-32.6	67.3	0.00	0.00	
1,050.0	10.06	331.00	1,045.3	63.5	-35.2	72.6	0.00	0.00	
1,080.0	10.06	331.00	1,074.9	68.1	-37.7	77.8	0.00	0.00	
1,110.0	10.06	331.00	1,104.4	72.6	-40.3	83.1	0.00	0.00	
1,140.0	10.06	331.00	1,134.0	77.2	-42.8	88.3	0.00	0.00	
1,170.0	10.06	331.00	1,163.5	81.8	-45.3	93.5	0.00	0.00	
1,200.0	10.06	331.00	1,193.0	86.4	-47.9	98.8	0.00	0.00	
1,230.0	10.06	331.00	1,222.6	91.0	-50.4	104.0	0.00	0.00	
1,260.0	10.06	331.00	1,252.1	95.6	-53.0	109.2	0.00	0.00	
1,290.0	10.06	331.00	1,281.7	100.1	-55.5	114.5	0.00	0.00	
1,320.0	10.06	331.00	1,311.2	104.7	-58.0	119.7	0.00	0.00	
1,350.0	10.06	331.00	1,340.7	109.3	-60.6	125.0	0.00	0.00	
1,380.0	10.06	331.00	1,370.3	113.9	-63.1	130.2	0.00	0.00	
1,410.0	10.06	331.00	1,399.8	118.5	-65.7	135.4	0.00	0.00	
1,440.0	10.06	331.00	1,429.3	123.0	-68.2	140.7	0.00	0.00	
1,470.0	10.06	331.00	1,458.9	127.6	-70.7	145.9	0.00	0.00	
1,500.0	10.06	331.00	1,488.4	132.2	-73.3	151.2	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-13D (OXY 22 Pad)	<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
1,530.0	10.06	331.00	1,518.0	136.8	-75.8	156.4	0.00	0.00	
1,560.0	10.06	331.00	1,547.5	141.4	-78.4	161.6	0.00	0.00	
1,590.0	10.06	331.00	1,577.0	145.9	-80.9	166.9	0.00	0.00	
1,620.0	10.06	331.00	1,606.6	150.5	-83.4	172.1	0.00	0.00	
1,650.0	10.06	331.00	1,636.1	155.1	-86.0	177.3	0.00	0.00	
1,680.0	10.06	331.00	1,665.7	159.7	-88.5	182.6	0.00	0.00	
1,710.0	10.06	331.00	1,695.2	164.3	-91.1	187.8	0.00	0.00	
1,740.0	10.06	331.00	1,724.7	168.9	-93.6	193.1	0.00	0.00	
1,770.0	10.06	331.00	1,754.3	173.4	-96.1	198.3	0.00	0.00	
1,800.0	10.06	331.00	1,783.8	178.0	-98.7	203.5	0.00	0.00	
1,830.0	10.06	331.00	1,813.4	182.6	-101.2	208.8	0.00	0.00	
1,860.0	10.06	331.00	1,842.9	187.2	-103.7	214.0	0.00	0.00	
1,890.0	10.06	331.00	1,872.4	191.8	-106.3	219.2	0.00	0.00	
1,920.0	10.06	331.00	1,902.0	196.3	-108.8	224.5	0.00	0.00	
1,950.0	10.06	331.00	1,931.5	200.9	-111.4	229.7	0.00	0.00	
1,980.0	10.06	331.00	1,961.1	205.5	-113.9	235.0	0.00	0.00	
2,010.0	10.06	331.00	1,990.6	210.1	-116.4	240.2	0.00	0.00	
2,040.0	10.06	331.00	2,020.1	214.7	-119.0	245.4	0.00	0.00	
2,070.0	10.06	331.00	2,049.7	219.3	-121.5	250.7	0.00	0.00	
2,100.0	10.06	331.00	2,079.2	223.8	-124.1	255.9	0.00	0.00	
2,115.0	10.06	331.00	2,094.0	226.1	-125.3	258.5	0.00	0.00	Wasatch
2,130.0	10.06	331.00	2,108.7	228.4	-126.6	261.2	0.00	0.00	
2,160.0	10.06	331.00	2,138.3	233.0	-129.1	266.4	0.00	0.00	
2,190.0	10.06	331.00	2,167.8	237.6	-131.7	271.6	0.00	0.00	
2,220.0	10.06	331.00	2,197.4	242.2	-134.2	276.9	0.00	0.00	
2,250.0	10.06	331.00	2,226.9	246.7	-136.8	282.1	0.00	0.00	
2,280.0	10.06	331.00	2,256.4	251.3	-139.3	287.3	0.00	0.00	
2,310.0	10.06	331.00	2,286.0	255.9	-141.8	292.6	0.00	0.00	
2,340.0	10.06	331.00	2,315.5	260.5	-144.4	297.8	0.00	0.00	
2,370.0	10.06	331.00	2,345.1	265.1	-146.9	303.1	0.00	0.00	
2,400.0	10.06	331.00	2,374.6	269.6	-149.5	308.3	0.00	0.00	
2,430.0	10.06	331.00	2,404.1	274.2	-152.0	313.5	0.00	0.00	
2,460.0	10.06	331.00	2,433.7	278.8	-154.5	318.8	0.00	0.00	
2,490.0	10.06	331.00	2,463.2	283.4	-157.1	324.0	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									
OXY 22-13D (OXY 22 P	0.00	0.00	8,914.0	944.9	-523.7	1,620,257.02	2,237,213.47	39.505211	-108.203764
- plan misses target center by 6495.0ft at 2490.0ft MD (2463.2 TVD, 283.4 N, -157.1 E)									
- Rectangle (sides W200.0 H100.0 D0.0)									
OXY 22-13D (OXY 22 P	0.00	0.00	7,064.0	944.9	-523.7	1,620,257.02	2,237,213.47	39.505211	-108.203764
- plan misses target center by 4662.5ft at 2490.0ft MD (2463.2 TVD, 283.4 N, -157.1 E)									
- Point									

# Cathedral Energy Services

## Planning Report

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<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-13D (OXY 22 Pad)	<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	10.06	331.00	2,473.1	284.9	-157.9	325.8	0.00	0.00	
2,600.0	10.06	331.00	2,571.5	300.2	-166.4	343.2	0.00	0.00	
2,700.0	10.06	331.00	2,670.0	315.5	-174.8	360.7	0.00	0.00	
2,800.0	10.06	331.00	2,768.5	330.7	-183.3	378.1	0.00	0.00	
2,900.0	10.06	331.00	2,866.9	346.0	-191.8	395.6	0.00	0.00	
3,000.0	10.06	331.00	2,965.4	361.3	-200.2	413.1	0.00	0.00	
3,100.0	10.06	331.00	3,063.8	376.6	-208.7	430.5	0.00	0.00	
3,200.0	10.06	331.00	3,162.3	391.8	-217.2	448.0	0.00	0.00	
3,300.0	10.06	331.00	3,260.8	407.1	-225.6	465.4	0.00	0.00	
3,400.0	10.06	331.00	3,359.2	422.4	-234.1	482.9	0.00	0.00	
3,500.0	10.06	331.00	3,457.7	437.6	-242.6	500.4	0.00	0.00	
3,600.0	10.06	331.00	3,556.2	452.9	-251.0	517.8	0.00	0.00	
3,700.0	10.06	331.00	3,654.6	468.2	-259.5	535.3	0.00	0.00	
3,800.0	10.06	331.00	3,753.1	483.5	-268.0	552.7	0.00	0.00	
3,900.0	10.06	331.00	3,851.6	498.7	-276.4	570.2	0.00	0.00	
4,000.0	10.06	331.00	3,950.0	514.0	-284.9	587.7	0.00	0.00	
4,100.0	10.06	331.00	4,048.5	529.3	-293.4	605.1	0.00	0.00	
4,186.8	10.06	331.00	4,134.0	542.5	-300.7	620.3	0.00	0.00	Ft Union
4,200.0	10.06	331.00	4,147.0	544.5	-301.8	622.6	0.00	0.00	
4,300.0	10.06	331.00	4,245.4	559.8	-310.3	640.1	0.00	0.00	
4,400.0	10.06	331.00	4,343.9	575.1	-318.7	657.5	0.00	0.00	
4,500.0	10.06	331.00	4,442.3	590.4	-327.2	675.0	0.00	0.00	
4,600.0	10.06	331.00	4,540.8	605.6	-335.7	692.4	0.00	0.00	
4,694.6	10.06	331.00	4,634.0	620.1	-343.7	709.0	0.00	0.00	Base Ft union
4,700.0	10.06	331.00	4,639.3	620.9	-344.1	709.9	0.00	0.00	
4,800.0	10.06	331.00	4,737.7	636.2	-352.6	727.4	0.00	0.00	
4,900.0	10.06	331.00	4,836.2	651.4	-361.1	744.8	0.00	0.00	
5,000.0	10.06	331.00	4,934.7	666.7	-369.5	762.3	0.00	0.00	
5,100.0	10.06	331.00	5,033.1	682.0	-378.0	779.7	0.00	0.00	
5,200.0	10.06	331.00	5,131.6	697.3	-386.5	797.2	0.00	0.00	
5,300.0	10.06	331.00	5,230.1	712.5	-394.9	814.7	0.00	0.00	
5,400.0	10.06	331.00	5,328.5	727.8	-403.4	832.1	0.00	0.00	
5,500.0	10.06	331.00	5,427.0	743.1	-411.9	849.6	0.00	0.00	
5,600.0	10.06	331.00	5,525.4	758.3	-420.3	867.0	0.00	0.00	
5,700.0	10.06	331.00	5,623.9	773.6	-428.8	884.5	0.00	0.00	
5,800.0	10.06	331.00	5,722.4	788.9	-437.3	902.0	0.00	0.00	
5,900.0	10.06	331.00	5,820.8	804.2	-445.7	919.4	0.00	0.00	
5,943.8	10.06	331.00	5,864.0	810.9	-449.4	927.1	0.00	0.00	Ohio Creek
6,000.0	10.06	331.00	5,919.3	819.4	-454.2	936.9	0.00	0.00	
6,100.0	10.06	331.00	6,017.8	834.7	-462.6	954.3	0.00	0.00	
6,147.0	10.06	331.00	6,064.0	841.9	-466.6	962.5	0.00	0.00	Williams Fork
6,200.0	10.06	331.00	6,116.2	850.0	-471.1	971.8	0.00	0.00	
6,300.0	10.06	331.00	6,214.7	865.3	-479.6	989.3	0.00	0.00	
6,400.0	10.06	331.00	6,313.2	880.5	-488.0	1,006.7	0.00	0.00	
6,485.2	10.06	331.00	6,397.0	893.5	-495.3	1,021.6	0.00	0.00	Start Drop -1.50
6,500.0	9.83	331.00	6,411.6	895.8	-496.5	1,024.2	1.50	-1.50	
6,600.0	8.33	331.00	6,510.4	909.6	-504.1	1,039.9	1.50	-1.50	
6,700.0	6.83	331.00	6,609.5	921.1	-510.5	1,053.1	1.50	-1.50	
6,800.0	5.33	331.00	6,708.9	930.4	-515.7	1,063.7	1.50	-1.50	
6,900.0	3.83	331.00	6,808.6	937.4	-519.6	1,071.7	1.50	-1.50	
7,000.0	2.33	331.00	6,908.5	942.1	-522.2	1,077.1	1.50	-1.50	
7,100.0	0.83	331.00	7,008.4	944.5	-523.5	1,079.9	1.50	-1.50	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-13D (OXY 22 Pad)	<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
7,155.6	0.00	0.00	7,064.0	944.9	-523.7	1,080.3	1.50	-1.50	EOD; Inc=0° - Approx TOG - OXY 22-13D (OX
7,200.0	0.00	0.00	7,108.4	944.9	-523.7	1,080.3	0.00	0.00	
7,300.0	0.00	0.00	7,208.4	944.9	-523.7	1,080.3	0.00	0.00	
7,400.0	0.00	0.00	7,308.4	944.9	-523.7	1,080.3	0.00	0.00	
7,500.0	0.00	0.00	7,408.4	944.9	-523.7	1,080.3	0.00	0.00	
7,600.0	0.00	0.00	7,508.4	944.9	-523.7	1,080.3	0.00	0.00	
7,700.0	0.00	0.00	7,608.4	944.9	-523.7	1,080.3	0.00	0.00	
7,800.0	0.00	0.00	7,708.4	944.9	-523.7	1,080.3	0.00	0.00	
7,900.0	0.00	0.00	7,808.4	944.9	-523.7	1,080.3	0.00	0.00	
8,000.0	0.00	0.00	7,908.4	944.9	-523.7	1,080.3	0.00	0.00	
8,100.0	0.00	0.00	8,008.4	944.9	-523.7	1,080.3	0.00	0.00	
8,200.0	0.00	0.00	8,108.4	944.9	-523.7	1,080.3	0.00	0.00	
8,300.0	0.00	0.00	8,208.4	944.9	-523.7	1,080.3	0.00	0.00	
8,400.0	0.00	0.00	8,308.4	944.9	-523.7	1,080.3	0.00	0.00	
8,500.0	0.00	0.00	8,408.4	944.9	-523.7	1,080.3	0.00	0.00	
8,505.6	0.00	0.00	8,414.0	944.9	-523.7	1,080.3	0.00	0.00	Cameo
8,600.0	0.00	0.00	8,508.4	944.9	-523.7	1,080.3	0.00	0.00	
8,700.0	0.00	0.00	8,608.4	944.9	-523.7	1,080.3	0.00	0.00	
8,800.0	0.00	0.00	8,708.4	944.9	-523.7	1,080.3	0.00	0.00	
8,855.6	0.00	0.00	8,764.0	944.9	-523.7	1,080.3	0.00	0.00	Rollins SS
8,900.0	0.00	0.00	8,808.4	944.9	-523.7	1,080.3	0.00	0.00	
9,000.0	0.00	0.00	8,908.4	944.9	-523.7	1,080.3	0.00	0.00	
9,005.6	0.00	0.00	8,914.0	944.9	-523.7	1,080.3	0.00	0.00	TD at 9005.6 - OXY 22-13D (OXY 22 Pad) 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									
OXY 22-13D (OXY 22 P	0.00	0.00	8,914.0	944.9	-523.7	1,620,257.02	2,237,213.47	39.505211	-108.203764
- plan hits target center									
- Rectangle (sides W100.0 H200.0 D0.0)									
OXY 22-13D (OXY 22 P	0.00	0.00	7,064.0	944.9	-523.7	1,620,257.02	2,237,213.47	39.505211	-108.203764
- plan hits target center									
- Point									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,115.0	2,094.0	Wasatch		0.00	
4,186.8	4,134.0	Ft Union		0.00	
4,694.6	4,634.0	Base Ft union		0.00	
5,943.8	5,864.0	Ohio Creek		0.00	
6,147.0	6,064.0	Williams Fork		0.00	
7,155.6	7,064.0	Approx TOG		0.00	
8,505.6	8,414.0	Cameo		0.00	
8,855.6	8,764.0	Rollins SS		0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	US EDM 2003.21 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Project:</b>	Garfield County	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site:</b>	SWSE S22-T6S-R97W	<b>North Reference:</b>	True
<b>Well:</b>	OXY 22-13D (OXY 22 Pad)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300'
970.4	967.0	51.3	-28.4	EOB; Inc=10.06°
6,485.2	6,397.0	893.5	-495.3	Start Drop -1.50
7,155.6	7,064.0	944.9	-523.7	EOD; Inc=0°
9,005.6	8,914.0	944.9	-523.7	TD at 9005.6

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

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

Survey Tool Program		Date	10/1/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	9,005.6	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						
SWSE S22-T6S-R97W						
OXY 22-10D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	45.2	44.2	45.460	CC, ES
OXY 22-10D (OXY 22 Pad) - DD - Plan #1	800.0	797.1	71.0	68.1	24.572	SF
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	30.4	29.4	30.517	CC, ES
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	900.0	899.3	51.1	47.7	14.760	SF
OXY 22-12D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	15.2	14.2	15.241	CC
OXY 22-12D (OXY 22 Pad) - DD - Plan #1	400.0	400.1	15.4	14.0	11.398	ES
OXY 22-12D (OXY 22 Pad) - DD - Plan #1	900.0	900.5	22.5	19.0	6.347	SF
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	14.7	13.7	14.778	CC
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	400.0	399.8	14.8	13.5	11.023	ES
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	1,100.0	1,098.2	24.4	19.6	5.076	SF
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	29.6	28.9	45.785	CC, ES
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	1,100.0	1,092.9	57.4	52.8	12.506	SF
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	44.6	43.9	69.011	CC, ES
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	1,200.0	1,188.8	81.2	76.0	15.589	SF
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	61.2	60.2	61.557	CC, ES
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	700.0	698.0	77.2	74.8	31.664	SF
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	46.4	45.4	46.640	CC, ES
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	700.0	699.3	61.0	58.5	25.069	SF
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	32.1	31.1	32.232	CC
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	400.0	400.5	32.2	30.9	23.935	ES
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	600.0	600.5	37.5	35.4	18.048	SF
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	18.2	17.2	18.326	CC, ES
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	500.0	500.3	20.6	18.9	12.116	SF
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	9.8	9.2	15.203	CC
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	10.0	9.0	10.014	ES
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	400.0	399.8	12.3	10.9	9.067	SF
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	17.4	16.7	26.894	CC, ES
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	400.0	399.1	22.0	20.6	16.310	SF
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	31.0	30.4	48.039	CC, ES
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	700.0	694.3	58.1	55.6	23.080	SF
OXY 22-8D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	45.8	45.2	70.947	CC, ES
OXY 22-8D (OXY 22 Pad) - DD - Plan #1	1,000.0	985.0	107.6	103.4	26.184	SF
OXY 22-9D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	60.2	59.2	60.532	CC, ES
OXY 22-9D (OXY 22 Pad) - DD - Plan #1	700.0	694.4	80.9	78.5	33.103	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 OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		SWSE S22-T6S-R97W - OXY 22-10D (OXY 22 Pad) - 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					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	-143.65	-36.4	-26.8	45.2								
100.0	100.0	100.0	100.0	0.1	0.1	-143.65	-36.4	-26.8	45.2	44.9	0.30	152.424					
200.0	200.0	200.0	200.0	0.3	0.3	-143.65	-36.4	-26.8	45.2	44.6	0.65	70.033					
300.0	300.0	300.0	300.0	0.5	0.5	-143.65	-36.4	-26.8	45.2	44.2	0.99	45.460	CC, ES				
400.0	400.0	400.0	400.0	0.7	0.7	-116.13	-36.4	-26.8	45.8	44.4	1.35	34.040					
500.0	499.9	499.3	499.3	0.9	0.8	-118.97	-36.4	-28.1	48.3	46.6	1.70	28.384					
600.0	599.7	598.5	598.4	1.1	1.0	-121.39	-36.2	-32.0	53.4	51.4	2.07	25.784					
700.0	699.3	697.6	697.3	1.3	1.2	-123.20	-36.0	-38.4	61.2	58.7	2.47	24.792					
800.0	798.6	797.1	796.5	1.5	1.4	-125.46	-35.6	-46.0	71.0	68.1	2.89	24.572	SF				
900.0	897.5	896.3	895.4	1.8	1.6	-128.58	-35.3	-53.5	82.4	79.1	3.33	24.789					
970.4	967.0	966.0	964.9	2.0	1.8	-131.02	-35.1	-58.8	91.7	88.0	3.64	25.185					
1,000.0	996.1	995.3	994.1	2.1	1.8	-132.06	-35.0	-61.1	95.8	92.0	3.77	25.393					
1,100.0	1,094.6	1,094.1	1,092.7	2.5	2.0	-135.01	-34.7	-68.6	109.8	105.6	4.22	26.046					
1,200.0	1,193.0	1,193.0	1,191.2	2.8	2.3	-137.29	-34.4	-76.2	124.1	119.4	4.66	26.630					
1,300.0	1,291.5	1,291.9	1,289.8	3.1	2.5	-139.10	-34.1	-83.7	138.5	133.4	5.10	27.149					
1,400.0	1,390.0	1,390.7	1,388.4	3.5	2.7	-140.56	-33.8	-91.2	153.1	147.5	5.54	27.611					
1,500.0	1,488.4	1,489.6	1,487.0	3.8	2.9	-141.77	-33.5	-98.8	167.7	161.7	5.98	28.023					
1,600.0	1,586.9	1,588.5	1,585.6	4.2	3.1	-142.79	-33.2	-106.3	182.3	175.9	6.42	28.391					
1,700.0	1,685.4	1,687.3	1,684.2	4.5	3.3	-143.65	-32.9	-113.9	197.1	190.2	6.86	28.722					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		SWSE S22-T6S-R97W - OXY 22-11D (OXY 22 Pad) - DD - Plan #1											Offset Site Error: 0.0 ft			
Survey Program: 0-MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-143.50	-24.4	-18.1	30.4							
100.0	100.0	100.0	100.0	0.1	0.1	-143.50	-24.4	-18.1	30.4	30.1	0.30	102.322				
200.0	200.0	200.0	200.0	0.3	0.3	-143.50	-24.4	-18.1	30.4	29.7	0.65	47.013				
300.0	300.0	300.0	300.0	0.5	0.5	-143.50	-24.4	-18.1	30.4	29.4	0.99	30.517	CC, ES			
400.0	400.0	400.0	400.0	0.7	0.7	-114.28	-23.7	-19.1	30.9	29.6	1.35	22.975				
500.0	499.9	499.9	499.8	0.9	0.9	-113.65	-21.4	-22.3	32.7	31.0	1.71	19.078				
600.0	599.7	599.8	599.5	1.1	1.1	-112.74	-17.7	-27.7	35.6	33.5	2.11	16.880				
700.0	699.3	699.7	699.0	1.3	1.3	-112.33	-12.7	-34.8	39.6	37.1	2.54	15.622				
800.0	798.6	799.6	798.5	1.5	1.5	-114.79	-7.6	-42.1	44.7	41.7	2.99	14.949				
900.0	897.5	899.3	897.8	1.8	1.7	-119.33	-2.5	-49.4	51.1	47.7	3.46	14.760	SF			
970.4	967.0	969.4	967.6	2.0	1.9	-123.22	1.1	-54.6	56.6	52.8	3.80	14.920				
1,000.0	996.1	998.8	996.9	2.1	1.9	-124.88	2.6	-56.7	59.2	55.2	3.93	15.047				
1,100.0	1,094.6	1,098.3	1,096.0	2.5	2.2	-129.55	7.7	-64.0	68.1	63.7	4.39	15.510				
1,200.0	1,193.0	1,197.8	1,195.1	2.8	2.4	-133.13	12.7	-71.3	77.3	72.5	4.84	15.987				
1,300.0	1,291.5	1,297.2	1,294.2	3.1	2.6	-135.93	17.8	-78.6	86.8	81.5	5.28	16.448				
1,400.0	1,390.0	1,396.7	1,393.2	3.5	2.8	-138.18	22.9	-85.8	96.4	90.7	5.71	16.880				
1,500.0	1,488.4	1,496.2	1,492.3	3.8	3.1	-140.02	28.0	-93.1	106.2	100.0	6.14	17.281				
1,600.0	1,586.9	1,595.7	1,591.4	4.2	3.3	-141.55	33.1	-100.4	116.0	109.4	6.57	17.649				
1,700.0	1,685.4	1,695.1	1,690.5	4.5	3.5	-142.83	38.2	-107.7	125.9	118.9	7.00	17.988				
1,800.0	1,783.8	1,794.6	1,789.5	4.8	3.8	-143.93	43.2	-115.0	135.9	128.5	7.43	18.298				
1,900.0	1,882.3	1,894.1	1,888.6	5.2	4.0	-144.88	48.3	-122.2	145.9	138.0	7.85	18.583				
2,000.0	1,980.7	1,993.5	1,987.7	5.5	4.2	-145.71	53.4	-129.5	155.9	147.7	8.27	18.844				
2,100.0	2,079.2	2,093.0	2,086.8	5.9	4.5	-146.44	58.5	-136.8	166.0	157.3	8.70	19.086				
2,200.0	2,177.7	2,192.5	2,185.8	6.2	4.7	-147.08	63.6	-144.1	176.1	167.0	9.12	19.308				
2,300.0	2,276.1	2,291.9	2,284.9	6.6	4.9	-147.66	68.6	-151.4	186.2	176.7	9.54	19.514				
2,400.0	2,374.6	2,391.4	2,384.0	6.9	5.2	-148.17	73.7	-158.7	196.4	186.4	9.96	19.705				
2,500.0	2,473.1	2,490.9	2,483.0	7.3	5.4	-148.64	78.8	-165.9	206.5	196.1	10.39	19.883				

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<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	-144.77	-12.4	-8.7	15.2					
100.0	100.0	100.0	100.0	0.1	0.1	-144.77	-12.4	-8.7	15.2	14.9	0.30	51.101		
200.0	200.0	200.0	200.0	0.3	0.3	-144.77	-12.4	-8.7	15.2	14.5	0.65	23.479		
300.0	300.0	300.0	300.0	0.5	0.5	-144.77	-12.4	-8.7	15.2	14.2	0.99	15.241 CC		
400.0	400.0	400.1	400.1	0.7	0.7	-115.48	-11.3	-9.6	15.4	14.0	1.35	11.398 ES		
500.0	499.9	500.2	500.1	0.9	0.9	-114.67	-8.2	-12.0	15.9	14.2	1.71	9.296		
600.0	599.7	600.3	600.0	1.1	1.1	-113.44	-3.1	-16.0	16.9	14.8	2.11	8.009		
700.0	699.3	700.4	699.7	1.3	1.3	-111.94	4.2	-21.6	18.2	15.7	2.54	7.160		
800.0	798.6	800.5	799.1	1.5	1.5	-110.46	13.4	-28.8	20.0	16.9	3.03	6.581		
900.0	897.5	900.5	898.2	1.8	1.8	-113.46	23.3	-36.5	22.5	19.0	3.55	6.347 SF		
970.4	967.0	970.8	968.0	2.0	2.0	-118.43	30.2	-41.9	25.0	21.1	3.90	6.426		
1,000.0	996.1	1,000.3	997.3	2.1	2.0	-120.75	33.2	-44.2	26.3	22.3	4.04	6.514		
1,100.0	1,094.6	1,100.2	1,096.4	2.5	2.3	-127.14	43.0	-51.9	30.8	26.3	4.49	6.850		
1,200.0	1,193.0	1,200.0	1,195.5	2.8	2.6	-131.87	52.9	-59.6	35.6	30.6	4.93	7.205		
1,300.0	1,291.5	1,299.9	1,294.5	3.1	2.9	-135.46	62.8	-67.2	40.5	35.1	5.36	7.551		
1,400.0	1,390.0	1,399.7	1,393.6	3.5	3.1	-138.25	72.6	-74.9	45.6	39.8	5.79	7.875		
1,500.0	1,488.4	1,499.6	1,492.7	3.8	3.4	-140.49	82.5	-82.6	50.7	44.5	6.21	8.174		
1,600.0	1,586.9	1,599.4	1,591.7	4.2	3.7	-142.31	92.4	-90.3	56.0	49.3	6.63	8.447		
1,700.0	1,685.4	1,699.3	1,690.8	4.5	4.0	-143.82	102.2	-97.9	61.2	54.2	7.04	8.698		
1,800.0	1,783.8	1,799.1	1,789.8	4.8	4.2	-145.08	112.1	-105.6	66.6	59.1	7.46	8.927		
1,900.0	1,882.3	1,899.0	1,888.9	5.2	4.5	-146.16	122.0	-113.3	71.9	64.0	7.87	9.136		
2,000.0	1,980.7	1,998.8	1,988.0	5.5	4.8	-147.09	131.8	-121.0	77.3	69.0	8.28	9.327		
2,100.0	2,079.2	2,098.7	2,087.0	5.9	5.1	-147.90	141.7	-128.7	82.6	73.9	8.69	9.504		
2,200.0	2,177.7	2,198.5	2,186.1	6.2	5.3	-148.61	151.6	-136.3	88.0	78.9	9.11	9.666		
2,300.0	2,276.1	2,298.4	2,285.2	6.6	5.6	-149.24	161.4	-144.0	93.4	83.9	9.52	9.815		
2,400.0	2,374.6	2,398.2	2,384.2	6.9	5.9	-149.80	171.3	-151.7	98.8	88.9	9.93	9.954		
2,500.0	2,473.1	2,498.1	2,483.3	7.3	6.2	-150.30	181.2	-159.4	104.3	93.9	10.34	10.082		
2,600.0	2,571.5	2,597.9	2,582.3	7.6	6.5	-150.76	191.0	-167.1	109.7	98.9	10.75	10.202		
2,700.0	2,670.0	2,697.8	2,681.4	8.0	6.7	-151.16	200.9	-174.7	115.1	104.0	11.16	10.313		
2,800.0	2,768.5	2,797.6	2,780.5	8.3	7.0	-151.54	210.8	-182.4	120.6	109.0	11.57	10.417		
2,900.0	2,866.9	2,897.5	2,879.5	8.7	7.3	-151.88	220.6	-190.1	126.0	114.0	11.98	10.514		
3,000.0	2,965.4	2,997.3	2,978.6	9.0	7.6	-152.19	230.5	-197.8	131.5	119.1	12.40	10.605		
3,100.0	3,063.8	3,097.2	3,077.7	9.4	7.8	-152.48	240.4	-205.5	136.9	124.1	12.81	10.691		
3,200.0	3,162.3	3,197.0	3,176.7	9.7	8.1	-152.74	250.2	-213.1	142.4	129.2	13.22	10.772		
3,300.0	3,260.8	3,296.9	3,275.8	10.1	8.4	-152.99	260.1	-220.8	147.8	134.2	13.63	10.848		
3,400.0	3,359.2	3,396.7	3,374.9	10.4	8.7	-153.22	270.0	-228.5	153.3	139.3	14.04	10.919		
3,500.0	3,457.7	3,496.6	3,473.9	10.8	9.0	-153.43	279.8	-236.2	158.8	144.3	14.45	10.987		
3,600.0	3,556.2	3,596.4	3,573.0	11.1	9.2	-153.63	289.7	-243.9	164.2	149.4	14.86	11.051		
3,700.0	3,654.6	3,696.3	3,672.0	11.5	9.5	-153.81	299.6	-251.5	169.7	154.4	15.27	11.112		
3,800.0	3,753.1	3,796.1	3,771.1	11.8	9.8	-153.99	309.4	-259.2	175.2	159.5	15.68	11.170		
3,900.0	3,851.6	3,896.0	3,870.2	12.2	10.1	-154.15	319.3	-266.9	180.6	164.5	16.09	11.225		
4,000.0	3,950.0	3,995.8	3,969.2	12.5	10.4	-154.30	329.2	-274.6	186.1	169.6	16.50	11.278		
4,100.0	4,048.5	4,095.7	4,068.3	12.9	10.6	-154.45	339.1	-282.3	191.6	174.7	16.91	11.328		
4,200.0	4,147.0	4,195.5	4,167.4	13.2	10.9	-154.58	348.9	-289.9	197.0	179.7	17.32	11.375		
4,300.0	4,245.4	4,295.4	4,266.4	13.6	11.2	-154.71	358.8	-297.6	202.5	184.8	17.73	11.421		
4,400.0	4,343.9	4,395.2	4,365.5	13.9	11.5	-154.84	368.7	-305.3	208.0	189.9	18.14	11.464		
4,500.0	4,442.3	4,495.1	4,464.5	14.3	11.8	-154.95	378.5	-313.0	213.5	194.9	18.55	11.506		
4,600.0	4,540.8	4,594.9	4,563.6	14.7	12.0	-155.06	388.4	-320.7	219.0	200.0	18.96	11.546		

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 OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-14D (OXY 22 Pad) - DD - Plan #1														Offset Site Error:	0.0 ft
Survey Program: O-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)				Between Centres (ft)	Between Ellipses (ft)		
0.0	0.0	0.0	0.0	0.0	0.0	35.16	12.0	8.5	14.7						
100.0	100.0	100.0	100.0	0.1	0.1	35.16	12.0	8.5	14.7	14.4	0.30	49.550			
200.0	200.0	200.0	200.0	0.3	0.3	35.16	12.0	8.5	14.7	14.1	0.65	22.766			
300.0	300.0	300.0	300.0	0.5	0.5	35.16	12.0	8.5	14.7	13.7	0.99	14.778 CC			
400.0	400.0	399.8	399.8	0.7	0.7	64.45	13.2	8.0	14.8	13.5	1.35	11.023 ES			
500.0	499.9	499.6	499.5	0.9	0.9	65.32	16.8	6.5	15.2	13.5	1.71	8.917			
600.0	599.7	599.4	599.1	1.1	1.1	66.66	22.9	4.0	15.9	13.8	2.10	7.588			
700.0	699.3	699.2	698.4	1.3	1.3	68.36	31.3	0.6	16.9	14.4	2.53	6.681			
800.0	798.6	798.9	797.5	1.5	1.5	70.26	42.1	-3.8	18.1	15.1	3.01	6.026			
900.0	897.5	898.7	896.3	1.8	1.8	72.26	55.4	-9.2	19.7	16.1	3.56	5.531			
970.4	967.0	968.9	965.5	2.0	2.0	73.66	66.1	-13.6	21.0	17.0	4.00	5.250			
1,000.0	996.1	998.5	994.6	2.1	2.1	73.95	71.0	-15.6	21.6	17.4	4.18	5.166			
1,100.0	1,094.6	1,098.2	1,092.4	2.5	2.5	71.15	89.0	-22.9	24.4	19.6	4.80	5.076 SF			
1,200.0	1,193.0	1,197.8	1,189.6	2.8	2.9	64.52	109.1	-31.2	28.4	23.1	5.36	5.309			
1,300.0	1,291.5	1,297.7	1,286.9	3.1	3.3	58.75	129.9	-39.7	33.1	27.3	5.86	5.657			
1,400.0	1,390.0	1,397.5	1,384.2	3.5	3.7	54.45	150.7	-48.1	38.1	31.7	6.34	6.008			
1,500.0	1,488.4	1,497.4	1,481.5	3.8	4.1	51.15	171.5	-56.6	43.2	36.4	6.81	6.345			
1,600.0	1,586.9	1,597.2	1,578.8	4.2	4.5	48.56	192.2	-65.1	48.4	41.2	7.27	6.659			
1,700.0	1,685.4	1,697.1	1,676.1	4.5	5.0	46.48	213.0	-73.6	53.7	46.0	7.73	6.950			
1,800.0	1,783.8	1,796.9	1,773.4	4.8	5.4	44.77	233.8	-82.0	59.1	50.9	8.19	7.217			
1,900.0	1,882.3	1,896.7	1,870.7	5.2	5.8	43.35	254.5	-90.5	64.5	55.9	8.65	7.463			
2,000.0	1,980.7	1,996.6	1,967.9	5.5	6.2	42.14	275.3	-99.0	70.0	60.9	9.10	7.688			
2,100.0	2,079.2	2,096.4	2,065.2	5.9	6.6	41.12	296.1	-107.5	75.4	65.9	9.56	7.895			
2,200.0	2,177.7	2,196.3	2,162.5	6.2	7.1	40.23	316.9	-116.0	80.9	70.9	10.01	8.086			
2,300.0	2,276.1	2,296.1	2,259.8	6.6	7.5	39.45	337.6	-124.4	86.4	76.0	10.46	8.262			
2,400.0	2,374.6	2,395.9	2,357.1	6.9	7.9	38.77	358.4	-132.9	92.0	81.0	10.92	8.425			
2,500.0	2,473.1	2,495.8	2,454.4	7.3	8.3	38.16	379.2	-141.4	97.5	86.1	11.37	8.576			
2,600.0	2,571.5	2,595.6	2,551.7	7.6	8.8	37.62	399.9	-149.9	103.0	91.2	11.82	8.716			
2,700.0	2,670.0	2,695.5	2,649.0	8.0	9.2	37.14	420.7	-158.3	108.6	96.3	12.27	8.847			
2,800.0	2,768.5	2,795.3	2,746.3	8.3	9.6	36.70	441.5	-166.8	114.1	101.4	12.73	8.969			
2,900.0	2,866.9	2,895.2	2,843.5	8.7	10.1	36.30	462.3	-175.3	119.7	106.5	13.18	9.082			
3,000.0	2,965.4	2,995.0	2,940.8	9.0	10.5	35.94	483.0	-183.8	125.3	111.7	13.63	9.189			
3,100.0	3,063.8	3,094.8	3,038.1	9.4	10.9	35.61	503.8	-192.3	130.9	116.8	14.09	9.289			
3,200.0	3,162.3	3,194.7	3,135.4	9.7	11.3	35.31	524.6	-200.7	136.4	121.9	14.54	9.384			
3,300.0	3,260.8	3,294.5	3,232.7	10.1	11.8	35.03	545.3	-209.2	142.0	127.0	14.99	9.472			
3,400.0	3,359.2	3,394.4	3,330.0	10.4	12.2	34.77	566.1	-217.7	147.6	132.2	15.45	9.556			
3,500.0	3,457.7	3,494.2	3,427.3	10.8	12.6	34.53	586.9	-226.2	153.2	137.3	15.90	9.635			
3,600.0	3,556.2	3,594.0	3,524.6	11.1	13.0	34.30	607.7	-234.6	158.8	142.4	16.35	9.710			
3,700.0	3,654.6	3,693.9	3,621.8	11.5	13.5	34.10	628.4	-243.1	164.4	147.6	16.81	9.781			
3,800.0	3,753.1	3,793.7	3,719.1	11.8	13.9	33.90	649.2	-251.6	170.0	152.7	17.26	9.848			
3,900.0	3,851.6	3,893.6	3,816.4	12.2	14.3	33.72	670.0	-260.1	175.6	157.9	17.71	9.912			
4,000.0	3,950.0	3,993.4	3,913.7	12.5	14.8	33.55	690.7	-268.6	181.2	163.0	18.17	9.973			
4,100.0	4,048.5	4,093.3	4,011.0	12.9	15.2	33.39	711.5	-277.0	186.8	168.1	18.62	10.031			
4,200.0	4,147.0	4,193.1	4,108.3	13.2	15.6	33.24	732.3	-285.5	192.4	173.3	19.07	10.087			
4,300.0	4,245.4	4,292.9	4,205.6	13.6	16.0	33.09	753.1	-294.0	198.0	178.4	19.53	10.139			
4,400.0	4,343.9	4,392.8	4,302.9	13.9	16.5	32.96	773.8	-302.5	203.6	183.6	19.98	10.190			
4,500.0	4,442.3	4,492.6	4,400.2	14.3	16.9	32.83	794.6	-310.9	209.2	188.7	20.43	10.238			
4,600.0	4,540.8	4,592.5	4,497.4	14.7	17.3	32.71	815.4	-319.4	214.8	193.9	20.89	10.284			
4,700.0	4,639.3	4,692.3	4,594.7	15.0	17.8	32.60	836.1	-327.9	220.4	199.1	21.34	10.328			

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 OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-15D (OXY 22 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
0.0	0.0	0.0	0.0	0.0	0.0	35.60	24.0	17.2	29.6					
100.0	100.0	100.0	100.0	0.1	0.1	35.60	24.0	17.2	29.6	29.3	0.30	99.650		
200.0	200.0	200.0	200.0	0.3	0.3	35.60	24.0	17.2	29.6	28.9	0.65	45.785 CC, ES		
300.0	300.0	299.5	299.5	0.5	0.5	33.62	25.3	16.8	30.3	29.4	1.00	30.468		
400.0	400.0	399.0	398.9	0.7	0.7	59.18	29.0	15.6	32.2	30.8	1.35	23.834		
500.0	499.9	498.3	498.0	0.9	0.9	56.64	35.1	13.5	34.5	32.8	1.72	20.064		
600.0	599.7	597.7	596.9	1.1	1.1	54.91	43.6	10.6	37.2	35.1	2.11	17.645		
700.0	699.3	696.9	695.5	1.3	1.4	53.87	54.6	6.9	40.3	37.8	2.53	15.948		
800.0	798.6	796.0	793.6	1.5	1.7	53.41	68.0	2.4	43.8	40.8	2.98	14.667		
900.0	897.5	895.1	891.3	1.8	2.0	53.40	83.8	-2.9	47.5	44.1	3.48	13.641		
970.4	967.0	964.8	959.7	2.0	2.2	53.61	96.4	-7.1	50.4	46.5	3.87	13.021		
1,000.0	996.1	994.1	988.4	2.1	2.4	53.65	102.0	-9.0	51.7	47.7	4.03	12.817		
1,100.0	1,094.6	1,092.9	1,084.8	2.5	2.8	52.66	122.5	-15.9	57.4	52.8	4.59	12.506 SF		
1,200.0	1,193.0	1,191.4	1,180.3	2.8	3.2	50.34	145.3	-23.5	65.0	59.9	5.12	12.711		
1,300.0	1,291.5	1,289.6	1,274.9	3.1	3.7	47.32	170.3	-31.9	74.8	69.2	5.60	13.350		
1,400.0	1,390.0	1,389.0	1,370.3	3.5	4.2	44.60	196.5	-40.7	85.5	79.4	6.06	14.098		
1,500.0	1,488.4	1,488.3	1,465.8	3.8	4.7	42.49	222.7	-49.5	96.3	89.8	6.52	14.777		
1,600.0	1,586.9	1,587.7	1,561.2	4.2	5.2	40.81	248.9	-58.3	107.3	100.3	6.97	15.390		
1,700.0	1,685.4	1,687.0	1,656.6	4.5	5.7	39.44	275.1	-67.1	118.3	110.9	7.42	15.944		
1,800.0	1,783.8	1,786.4	1,752.1	4.8	6.2	38.30	301.3	-75.9	129.4	121.5	7.87	16.445		
1,900.0	1,882.3	1,885.7	1,847.5	5.2	6.7	37.34	327.5	-84.7	140.5	132.2	8.31	16.900		
2,000.0	1,980.7	1,985.1	1,942.9	5.5	7.2	36.53	353.7	-93.5	151.6	142.9	8.76	17.315		
2,100.0	2,079.2	2,084.4	2,038.4	5.9	7.7	35.82	379.9	-102.3	162.8	153.6	9.20	17.693		
2,200.0	2,177.7	2,183.8	2,133.8	6.2	8.2	35.21	406.1	-111.1	174.0	164.4	9.65	18.040		
2,300.0	2,276.1	2,283.1	2,229.2	6.6	8.7	34.67	432.3	-119.9	185.2	175.2	10.09	18.358		
2,400.0	2,374.6	2,382.5	2,324.7	6.9	9.2	34.19	458.5	-128.7	196.5	185.9	10.53	18.652		
2,500.0	2,473.1	2,481.9	2,420.1	7.3	9.8	33.77	484.7	-137.5	207.7	196.8	10.98	18.924		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-16D (OXY 22 Pad) - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	35.18	36.4	25.7	44.6					
100.0	100.0	100.0	100.0	0.1	0.1	35.18	36.4	25.7	44.6	44.3	0.30	150.200	CC, ES	
200.0	200.0	200.0	200.0	0.3	0.3	35.18	36.4	25.7	44.6	43.9	0.65	69.011		
300.0	300.0	299.3	299.3	0.5	0.5	33.89	37.7	25.3	45.4	44.4	1.00	45.567		
400.0	400.0	398.5	398.4	0.7	0.7	60.60	41.3	24.1	47.2	45.9	1.35	34.989		
500.0	499.9	497.6	497.3	0.9	0.9	58.87	47.5	22.2	49.6	47.9	1.72	28.833		
600.0	599.7	596.6	595.9	1.1	1.1	57.66	56.1	19.5	52.4	50.3	2.11	24.794		
700.0	699.3	695.6	694.2	1.3	1.4	56.93	67.1	16.0	55.6	53.0	2.54	21.913		
800.0	798.6	794.5	792.1	1.5	1.7	56.61	80.5	11.8	59.2	56.2	3.00	19.725		
900.0	897.5	893.3	889.5	1.8	2.0	56.63	96.3	6.9	63.1	59.6	3.51	17.981		
970.4	967.0	962.8	957.7	2.0	2.2	56.81	108.8	2.9	66.2	62.3	3.90	16.943		
1,000.0	996.1	992.0	986.4	2.1	2.3	56.87	114.5	1.1	67.6	63.5	4.07	16.584		
1,100.0	1,094.6	1,090.6	1,082.5	2.5	2.8	56.10	135.0	-5.3	73.4	68.8	4.65	15.798		
1,200.0	1,193.0	1,188.8	1,177.8	2.8	3.2	54.21	157.8	-12.5	81.2	76.0	5.21	15.589 SF		
1,300.0	1,291.5	1,286.6	1,272.0	3.1	3.7	51.59	182.9	-20.4	90.9	85.2	5.74	15.851		
1,400.0	1,390.0	1,383.8	1,365.0	3.5	4.2	48.64	210.0	-28.9	102.9	96.6	6.23	16.512		
1,500.0	1,488.4	1,480.4	1,456.5	3.8	4.8	45.61	239.2	-38.1	117.1	110.4	6.68	17.518		
1,600.0	1,586.9	1,577.9	1,548.4	4.2	5.3	42.75	270.5	-47.9	133.3	126.2	7.11	18.760		
1,700.0	1,685.4	1,676.4	1,641.1	4.5	5.9	40.46	302.3	-57.9	149.9	142.4	7.52	19.929		
1,800.0	1,783.8	1,774.8	1,733.7	4.8	6.5	38.63	334.0	-67.9	166.7	158.7	7.94	21.003		
1,900.0	1,882.3	1,873.3	1,826.4	5.2	7.1	37.13	365.7	-77.8	183.6	175.3	8.35	21.989		
2,000.0	1,980.7	1,971.7	1,919.1	5.5	7.7	35.88	397.4	-87.8	200.6	191.9	8.76	22.894		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-1D (OXY 22 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-153.16	-54.6	-27.7	61.2					
100.0	100.0	100.0	100.0	0.1	0.1	-153.16	-54.6	-27.7	61.2	60.9	0.30	206.398		
200.0	200.0	200.0	200.0	0.3	0.3	-153.16	-54.6	-27.7	61.2	60.6	0.65	94.832		
300.0	300.0	300.0	300.0	0.5	0.5	-153.16	-54.6	-27.7	61.2	60.2	0.99	61.557 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-125.15	-54.6	-27.7	62.0	60.6	1.34	46.091		
500.0	499.9	500.0	500.0	0.9	0.8	-129.15	-55.1	-26.4	64.3	62.6	1.70	37.800		
600.0	599.7	599.4	599.3	1.1	1.0	-136.56	-56.4	-22.8	68.9	66.8	2.07	33.340		
700.0	699.3	698.0	697.7	1.3	1.2	-145.89	-58.6	-16.7	77.2	74.8	2.44	31.664 SF		
800.0	798.6	795.4	794.6	1.5	1.4	-155.37	-61.6	-8.4	90.6	87.8	2.81	32.230		
900.0	897.5	891.2	889.8	1.8	1.7	-163.72	-65.4	2.0	109.7	106.5	3.18	34.521		
970.4	967.0	957.5	955.5	2.0	1.8	-168.66	-68.5	10.5	126.5	123.1	3.43	36.906		
1,000.0	996.1	985.5	983.2	2.1	1.9	-170.53	-70.0	14.4	134.3	130.8	3.54	38.000		
1,100.0	1,094.6	1,080.9	1,077.5	2.5	2.2	-175.58	-74.8	27.8	161.6	157.7	3.90	41.435		
1,200.0	1,193.0	1,176.2	1,171.8	2.8	2.5	-179.17	-79.7	41.2	189.6	185.4	4.26	44.466		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-2D (OXY 22 Pad) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-156.72	-42.6	-18.3	46.4				
100.0	100.0	100.0	100.0	0.1	0.1	-156.72	-42.6	-18.3	46.4	46.1	0.30	156.382	
200.0	200.0	200.0	200.0	0.3	0.3	-156.72	-42.6	-18.3	46.4	45.8	0.65	71.851	
300.0	300.0	300.0	300.0	0.5	0.5	-156.72	-42.6	-18.3	46.4	45.4	0.99	46.640	CC, ES
400.0	400.0	400.0	400.0	0.7	0.7	-128.96	-42.6	-18.3	47.2	45.9	1.34	35.109	
500.0	499.9	500.3	500.3	0.9	0.8	-133.91	-42.6	-17.0	49.4	47.7	1.70	29.043	
600.0	599.7	600.2	600.1	1.1	1.0	-142.98	-42.6	-13.1	53.4	51.3	2.06	25.893	
700.0	699.3	699.3	699.0	1.3	1.2	-154.18	-42.6	-6.6	61.0	58.5	2.43	25.069	SF
800.0	798.6	797.4	796.7	1.5	1.4	-165.16	-42.5	2.3	73.4	70.6	2.80	26.172	
900.0	897.5	894.2	892.9	1.8	1.7	-174.42	-42.4	13.6	91.3	88.1	3.18	28.689	
970.4	967.0	961.9	959.9	2.0	1.9	-179.64	-42.4	22.8	107.0	103.6	3.45	31.044	
1,000.0	996.1	990.5	988.2	2.1	1.9	178.56	-42.4	26.7	114.1	110.6	3.56	32.040	
1,100.0	1,094.6	1,086.8	1,083.7	2.5	2.2	173.84	-42.3	39.9	138.8	134.9	3.96	35.077	
1,200.0	1,193.0	1,183.2	1,179.1	2.8	2.5	170.56	-42.2	53.2	164.1	159.8	4.36	37.648	
1,300.0	1,291.5	1,279.6	1,274.6	3.1	2.7	168.15	-42.1	66.4	189.8	185.1	4.77	39.818	



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-3D (OXY 22 Pad) - 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	-162.59	-30.6	-9.6	32.1					
100.0	100.0	100.0	100.0	0.1	0.1	-162.59	-30.6	-9.6	32.1	31.8	0.30	108.070		
200.0	200.0	200.0	200.0	0.3	0.3	-162.59	-30.6	-9.6	32.1	31.4	0.65	49.654		
300.0	300.0	300.0	300.0	0.5	0.5	-162.59	-30.6	-9.6	32.1	31.1	0.99	32.232 CC		
400.0	400.0	400.5	400.5	0.7	0.7	-137.15	-30.1	-8.4	32.2	30.9	1.35	23.935 ES		
500.0	499.9	500.7	500.6	0.9	0.9	-147.38	-28.8	-4.6	33.4	31.7	1.71	19.596		
600.0	599.7	600.5	600.2	1.1	1.1	-162.03	-26.5	1.5	37.5	35.4	2.08	18.048 SF		
700.0	699.3	699.5	698.8	1.3	1.3	-176.77	-23.4	10.0	46.3	43.8	2.47	18.773		
800.0	798.6	797.6	796.2	1.5	1.5	171.54	-19.4	20.8	60.4	57.6	2.87	21.035		
900.0	897.5	895.0	892.7	1.8	1.8	163.39	-14.7	33.6	79.5	76.2	3.29	24.130		
970.4	967.0	963.5	960.4	2.0	2.0	159.82	-11.3	42.8	95.1	91.5	3.60	26.416		
1,000.0	996.1	992.2	988.8	2.1	2.1	158.72	-9.9	46.6	102.0	98.2	3.73	27.325		
1,100.0	1,094.6	1,089.3	1,084.9	2.5	2.4	155.92	-5.1	59.7	125.4	121.2	4.19	29.967		
1,200.0	1,193.0	1,186.3	1,181.0	2.8	2.6	154.00	-0.3	72.8	149.1	144.4	4.65	32.083		
1,300.0	1,291.5	1,283.4	1,277.0	3.1	2.9	152.60	4.5	85.8	172.8	167.7	5.11	33.804		
1,400.0	1,390.0	1,380.5	1,373.1	3.5	3.2	151.55	9.3	98.9	196.6	191.1	5.58	35.225		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-4D (OXY 22 Pad) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-177.34	-18.2	-0.8	18.2				
100.0	100.0	100.0	100.0	0.1	0.1	-177.34	-18.2	-0.8	18.2	17.9	0.30	61.447	
200.0	200.0	200.0	200.0	0.3	0.3	-177.34	-18.2	-0.8	18.2	17.6	0.65	28.232	
300.0	300.0	300.0	300.0	0.5	0.5	-177.34	-18.2	-0.8	18.2	17.2	0.99	18.326	CC, ES
400.0	400.0	400.3	400.3	0.7	0.7	-153.65	-17.4	0.2	18.6	17.3	1.35	13.835	
500.0	499.9	500.3	500.3	0.9	0.9	-167.82	-15.2	3.4	20.6	18.9	1.70	12.116	SF
600.0	599.7	600.1	599.8	1.1	1.1	175.28	-11.4	8.8	26.1	24.0	2.08	12.559	
700.0	699.3	699.2	698.5	1.3	1.3	161.77	-6.1	16.1	35.9	33.4	2.47	14.520	
800.0	798.6	797.7	796.3	1.5	1.5	152.75	0.6	25.5	50.0	47.1	2.90	17.247	
900.0	897.5	895.3	892.9	1.8	1.8	146.92	8.6	36.9	68.1	64.7	3.37	20.231	
970.4	967.0	963.4	960.0	2.0	2.0	144.04	15.1	46.0	83.1	79.3	3.71	22.358	
1,000.0	996.1	992.2	988.4	2.1	2.1	143.13	18.0	50.0	89.7	85.8	3.87	23.203	
1,100.0	1,094.6	1,089.5	1,084.3	2.5	2.4	140.85	27.7	63.6	112.3	107.9	4.39	25.606	
1,200.0	1,193.0	1,186.9	1,180.2	2.8	2.7	139.33	37.3	77.3	135.0	130.1	4.91	27.472	
1,300.0	1,291.5	1,284.2	1,276.1	3.1	3.1	138.25	47.0	90.9	157.8	152.3	5.45	28.953	
1,400.0	1,390.0	1,381.5	1,372.0	3.5	3.4	137.44	56.7	104.5	180.6	174.6	5.99	30.151	
1,500.0	1,488.4	1,478.9	1,467.9	3.8	3.7	136.82	66.4	118.1	203.5	196.9	6.53	31.139	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													SWSE S22-T6S-R97W - OXY 22-5D (OXY 22 Pad) - DD - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
							+N/-S (ft)	+E/-W (ft)									
0.0	0.0	0.0	0.0	0.0	0.0	129.10	-6.2	7.6	9.8								
100.0	100.0	100.0	100.0	0.1	0.1	129.10	-6.2	7.6	9.8	9.5	0.30	33.089					
200.0	200.0	200.0	200.0	0.3	0.3	129.10	-6.2	7.6	9.8	9.2	0.65	15.203 CC					
200.0	200.0	200.0	200.0	0.3	0.3	129.10	-6.2	7.6	9.8	9.2	0.65	15.202					
300.0	300.0	300.0	300.0	0.5	0.5	121.59	-5.2	8.5	10.0	9.0	1.00	10.014 ES					
400.0	400.0	399.8	399.7	0.7	0.7	135.44	-2.3	11.1	12.3	10.9	1.36	9.067 SF					
500.0	499.9	499.4	499.1	0.9	0.9	125.54	2.5	15.5	18.2	16.5	1.73	10.549					
600.0	599.7	598.6	597.8	1.1	1.1	121.10	9.1	21.6	27.4	25.3	2.12	12.934					
700.0	699.3	697.2	695.8	1.3	1.4	119.36	17.6	29.4	39.7	37.2	2.55	15.586					
800.0	798.6	795.2	792.8	1.5	1.7	118.76	27.9	38.9	55.0	52.0	3.02	18.224					
900.0	897.5	892.5	888.7	1.8	2.0	118.64	40.0	49.9	73.2	69.7	3.54	20.712					
970.4	967.0	960.4	955.4	2.0	2.2	118.68	49.4	58.6	87.8	83.9	3.93	22.359					
1,000.0	996.1	989.1	983.5	2.1	2.3	118.74	53.7	62.4	94.3	90.2	4.10	23.021					
1,100.0	1,094.6	1,086.6	1,079.0	2.5	2.7	118.88	68.2	75.7	116.2	111.5	4.68	24.855					
1,200.0	1,193.0	1,184.2	1,174.6	2.8	3.1	118.98	82.7	89.0	138.2	132.9	5.27	26.236					
1,300.0	1,291.5	1,281.7	1,270.1	3.1	3.4	119.04	97.2	102.3	160.1	154.2	5.86	27.307					
1,400.0	1,390.0	1,379.3	1,365.7	3.5	3.8	119.10	111.7	115.5	182.1	175.6	6.47	28.158					
1,500.0	1,488.4	1,476.9	1,461.3	3.8	4.2	119.14	126.2	128.8	204.0	196.9	7.07	28.849					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-6D (OXY 22 Pad) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	70.45	5.8	16.4	17.4				
100.0	100.0	100.0	100.0	0.1	0.1	70.45	5.8	16.4	17.4	17.1	0.30	58.535	
200.0	200.0	200.0	200.0	0.3	0.3	70.45	5.8	16.4	17.4	16.7	0.65	26.894 CC, ES	
300.0	300.0	299.6	299.6	0.5	0.5	68.21	6.9	17.1	18.5	17.5	1.00	18.545	
400.0	400.0	399.1	399.0	0.7	0.7	95.21	10.0	19.5	22.0	20.6	1.35	16.310 SF	
500.0	499.9	498.3	498.0	0.9	0.9	96.54	15.2	23.3	28.0	26.3	1.71	16.350	
600.0	599.7	597.3	596.5	1.1	1.1	99.25	22.4	28.7	36.6	34.5	2.10	17.403	
700.0	699.3	695.7	694.3	1.3	1.4	102.11	31.6	35.5	47.8	45.3	2.53	18.912	
800.0	798.6	793.6	791.2	1.5	1.7	104.66	42.7	43.8	61.8	58.8	3.00	20.582	
900.0	897.5	890.8	887.1	1.8	2.0	106.76	55.8	53.6	78.5	74.9	3.53	22.245	
970.4	967.0	958.8	953.8	2.0	2.2	107.99	66.1	61.2	91.8	87.9	3.93	23.365	
1,000.0	996.1	987.3	981.7	2.1	2.3	108.48	70.7	64.6	97.8	93.7	4.10	23.841	
1,100.0	1,094.6	1,083.0	1,075.1	2.5	2.7	109.21	87.3	77.0	119.2	114.5	4.71	25.322	
1,200.0	1,193.0	1,178.7	1,168.0	2.8	3.1	109.05	105.8	90.8	142.2	136.9	5.32	26.707	
1,300.0	1,291.5	1,275.9	1,262.2	3.1	3.6	108.77	125.0	105.1	165.7	159.7	5.96	27.813	
1,400.0	1,390.0	1,373.1	1,356.4	3.5	4.0	108.57	144.2	119.4	189.2	182.6	6.60	28.682	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-7D (OXY 22 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	54.05	18.2	25.1	31.0					
100.0	100.0	100.0	100.0	0.1	0.1	54.05	18.2	25.1	31.0	30.7	0.30	104.555		
200.0	200.0	200.0	200.0	0.3	0.3	54.05	18.2	25.1	31.0	30.4	0.65	48.039	CC, ES	
300.0	300.0	299.2	299.2	0.5	0.5	53.06	19.3	25.7	32.2	31.2	0.99	32.366		
400.0	400.0	398.4	398.3	0.7	0.7	81.50	22.7	27.6	35.6	34.2	1.34	26.444		
500.0	499.9	497.3	497.0	0.9	0.9	83.16	28.4	30.6	40.9	39.2	1.71	23.973		
600.0	599.7	596.0	595.3	1.1	1.1	86.06	36.2	34.9	48.4	46.3	2.09	23.116		
700.0	699.3	694.3	692.9	1.3	1.4	89.38	46.3	40.4	58.1	55.6	2.52	23.080	SF	
800.0	798.6	792.1	789.8	1.5	1.6	92.62	58.4	47.0	70.1	67.2	2.99	23.458		
900.0	897.5	889.4	885.7	1.8	2.0	95.51	72.7	54.8	84.6	81.1	3.52	24.025		
970.4	967.0	957.6	952.6	2.0	2.2	97.30	84.0	60.9	96.2	92.3	3.93	24.474		
1,000.0	996.1	986.1	980.6	2.1	2.3	98.00	89.0	63.7	101.5	97.3	4.11	24.698		
1,100.0	1,094.6	1,082.2	1,074.4	2.5	2.7	99.41	107.3	73.6	120.4	115.7	4.72	25.483		
1,200.0	1,193.0	1,177.6	1,167.0	2.8	3.1	99.74	127.5	84.6	141.2	135.8	5.36	26.333		
1,300.0	1,291.5	1,272.3	1,258.3	3.1	3.6	99.40	149.5	96.6	163.7	157.7	6.01	27.231		
1,400.0	1,390.0	1,366.4	1,348.4	3.5	4.1	98.65	173.4	109.6	188.0	181.3	6.67	28.200		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-8D (OXY 22 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	48.71	30.2	34.4	45.8					
100.0	100.0	100.0	100.0	0.1	0.1	48.71	30.2	34.4	45.8	45.5	0.30	154.414		
200.0	200.0	200.0	200.0	0.3	0.3	48.71	30.2	34.4	45.8	45.2	0.65	70.947 CC, ES		
300.0	300.0	298.9	298.9	0.5	0.5	47.98	31.4	34.9	47.0	46.0	0.99	47.229		
400.0	400.0	397.8	397.7	0.7	0.7	76.38	35.0	36.3	50.1	48.8	1.34	37.293		
500.0	499.9	496.4	496.1	0.9	0.9	77.26	41.0	38.5	55.0	53.3	1.71	32.230		
600.0	599.7	594.9	594.2	1.1	1.1	79.20	49.3	41.7	61.6	59.5	2.09	29.461		
700.0	699.3	693.0	691.6	1.3	1.4	81.72	59.9	45.8	70.1	67.6	2.51	27.892		
800.0	798.6	790.8	788.4	1.5	1.6	84.46	72.8	50.7	80.5	77.6	2.98	26.983		
900.0	897.5	888.1	884.4	1.8	2.0	87.15	88.0	56.5	93.0	89.5	3.52	26.450		
970.4	967.0	956.4	951.4	2.0	2.2	88.94	100.0	61.0	103.0	99.1	3.93	26.219		
1,000.0	996.1	985.0	979.5	2.1	2.3	89.66	105.3	63.1	107.6	103.4	4.11	26.184 SF		
1,100.0	1,094.6	1,081.4	1,073.6	2.5	2.7	91.20	124.8	70.5	124.1	119.4	4.73	26.242		
1,200.0	1,193.0	1,177.2	1,166.6	2.8	3.1	91.70	146.4	78.8	142.6	137.2	5.37	26.539		
1,300.0	1,291.5	1,272.3	1,258.3	3.1	3.6	91.50	169.9	87.7	162.9	156.8	6.03	27.011		
1,400.0	1,390.0	1,366.7	1,348.6	3.5	4.1	90.85	195.4	97.5	184.9	178.2	6.69	27.626		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> SWSE S22-T6S-R97W - OXY 22-9D (OXY 22 Pad) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-144.15	-48.8	-35.3	60.2				
100.0	100.0	100.0	100.0	0.1	0.1	-144.15	-48.8	-35.3	60.2	59.9	0.30	202.959	
200.0	200.0	200.0	200.0	0.3	0.3	-144.15	-48.8	-35.3	60.2	59.6	0.65	93.251	
300.0	300.0	300.0	300.0	0.5	0.5	-144.15	-48.8	-35.3	60.2	59.2	0.99	60.532 CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	-116.26	-48.8	-35.3	60.8	59.4	1.35	45.192	
500.0	499.9	498.5	498.5	0.9	0.8	-118.86	-49.4	-36.4	63.8	62.1	1.70	37.536	
600.0	599.7	596.7	596.6	1.1	1.0	-121.93	-51.4	-39.6	70.5	68.4	2.06	34.140	
700.0	699.3	694.4	694.1	1.3	1.2	-124.93	-54.5	-45.1	80.9	78.5	2.45	33.103 SF	
800.0	798.6	792.3	791.6	1.5	1.4	-127.62	-58.9	-52.4	95.0	92.2	2.85	33.383	
900.0	897.5	890.8	889.7	1.8	1.6	-130.48	-63.4	-60.2	111.3	108.1	3.27	34.051	
970.4	967.0	959.9	958.5	2.0	1.8	-132.54	-66.6	-65.7	124.0	120.4	3.57	34.685	
1,000.0	996.1	988.9	987.4	2.1	1.9	-133.42	-68.0	-68.0	129.5	125.8	3.70	34.976	
1,100.0	1,094.6	1,086.9	1,085.0	2.5	2.1	-135.93	-72.5	-75.7	148.4	144.3	4.14	35.854	
1,200.0	1,193.0	1,184.9	1,182.6	2.8	2.3	-137.87	-77.0	-83.4	167.6	163.0	4.58	36.599	
1,300.0	1,291.5	1,283.0	1,280.2	3.1	2.5	-139.40	-81.6	-91.2	186.8	181.8	5.02	37.239	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Berry Petroleum Company (NAD 83)	<b>Local Co-ordinate Reference:</b>	Well OXY 22-13D (OXY 22 Pad)
<b>Project:</b>	Garfield County	<b>TVD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Reference Site:</b>	SWSE S22-T6S-R97W	<b>MD Reference:</b>	KBE @ 8506.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OXY 22-13D (OXY 22 Pad)	<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>	US EDM 2003.21 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KBE @ 8506.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: OXY 22-13D (OXY 22 Pad)  
Coordinate System is US State Plane 1983, Colorado Central Zone  
Grid Convergence at Surface is: -1.70°

