

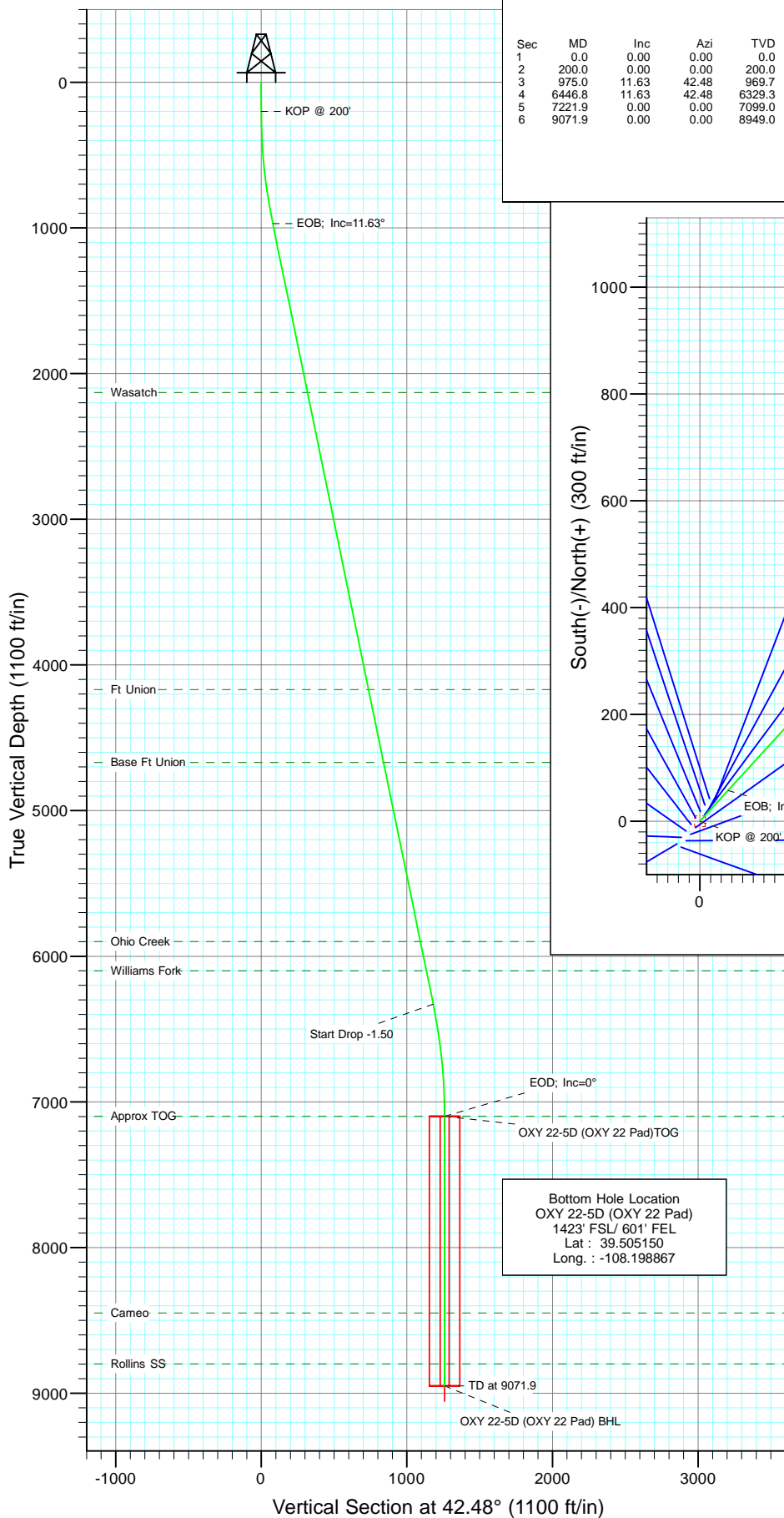


Berry Petroleum Company

Project: Garfield County
Site: SWSE S22-T6S-R97W
Well: OXY 22-5D (OXY 22 Pad)
Wellbore: DD
Design: Plan #1

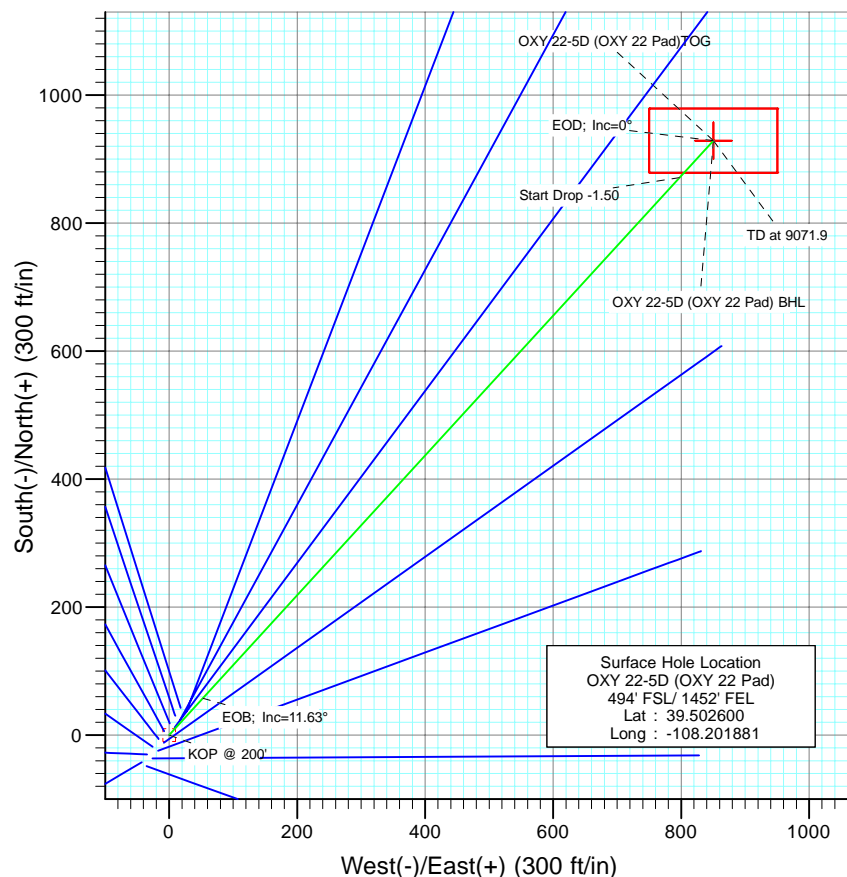


CATHEDRAL



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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	975.0	11.63	42.48	969.7	57.8	52.9	1.50	42.48	78.4	
4	6446.8	11.63	42.48	6329.3	871.0	797.5	0.00	0.00	1181.0	
5	7221.9	0.00	0.00	7099.0	928.8	850.4	1.50	180.00	1259.4	OXY 22-5D (OXY 22 Pad) TOG
6	9071.9	0.00	0.00	8949.0	928.8	850.4	0.00	0.00	1259.4	OXY 22-5D (OXY 22 Pad) BHL



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2129.0	2158.6	Wasatch
4169.0	4241.3	Ft Union
4669.0	4751.8	Base Ft Union
5899.0	6007.5	Ohio Creek
6099.0	6211.7	Williams Fork
7099.0	7221.9	Approx TOG
8449.0	8571.9	Cameo
8799.0	8921.9	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 22-5D (OXY 22 Pad) BHL	42.48	Slot	0.0	0.0	0.0

Cathedral Energy Services

Planning Report

Database:	US EDM 2003.21 Multi Users DB	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site:	SWSE S22-T6S-R97W	North Reference:	True
Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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

Site	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 22-5D (OXY 22 Pad)			
Well Position	+N/-S	0.0 ft	Northing:	1,619,290.59 ft
	+E/-W	0.0 ft	Easting:	2,237,716.27 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	8,491.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/29/2009	10.64	65.76	52,406

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	42.48

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
975.0	11.63	42.48	969.7	57.8	52.9	1.50	1.50	0.00	42.48	
6,446.8	11.63	42.48	6,329.3	871.0	797.5	0.00	0.00	0.00	0.00	
7,221.9	0.00	0.00	7,099.0	928.8	850.4	1.50	-1.50	0.00	180.00	OXY 22-5D (OXY 22
9,071.9	0.00	0.00	8,949.0	928.8	850.4	0.00	0.00	0.00	0.00	OXY 22-5D (OXY 22

Cathedral Energy Services

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Project:	Garfield County	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site:	SWSE S22-T6S-R97W	North Reference:	True
Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
30.0	0.00	0.00	30.0	0.0	0.0	0.0	0.00	0.00	
60.0	0.00	0.00	60.0	0.0	0.0	0.0	0.00	0.00	
90.0	0.00	0.00	90.0	0.0	0.0	0.0	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
210.0	0.15	42.48	210.0	0.0	0.0	0.0	1.50	1.50	
240.0	0.60	42.48	240.0	0.2	0.1	0.2	1.50	1.50	
270.0	1.05	42.48	270.0	0.5	0.4	0.6	1.50	1.50	
300.0	1.50	42.48	300.0	1.0	0.9	1.3	1.50	1.50	
330.0	1.95	42.48	330.0	1.6	1.5	2.2	1.50	1.50	
360.0	2.40	42.48	360.0	2.5	2.3	3.4	1.50	1.50	
390.0	2.85	42.48	389.9	3.5	3.2	4.7	1.50	1.50	
420.0	3.30	42.48	419.9	4.7	4.3	6.3	1.50	1.50	
450.0	3.75	42.48	449.8	6.0	5.5	8.2	1.50	1.50	
480.0	4.20	42.48	479.7	7.6	6.9	10.3	1.50	1.50	
510.0	4.65	42.48	509.7	9.3	8.5	12.6	1.50	1.50	
540.0	5.10	42.48	539.6	11.2	10.2	15.1	1.50	1.50	
570.0	5.55	42.48	569.4	13.2	12.1	17.9	1.50	1.50	
600.0	6.00	42.48	599.3	15.4	14.1	20.9	1.50	1.50	
630.0	6.45	42.48	629.1	17.8	16.3	24.2	1.50	1.50	
660.0	6.90	42.48	658.9	20.4	18.7	27.7	1.50	1.50	
690.0	7.35	42.48	688.7	23.1	21.2	31.4	1.50	1.50	
720.0	7.80	42.48	718.4	26.1	23.9	35.3	1.50	1.50	
750.0	8.25	42.48	748.1	29.2	26.7	39.5	1.50	1.50	
780.0	8.70	42.48	777.8	32.4	29.7	44.0	1.50	1.50	
810.0	9.15	42.48	807.4	35.8	32.8	48.6	1.50	1.50	
840.0	9.60	42.48	837.0	39.5	36.1	53.5	1.50	1.50	
870.0	10.05	42.48	866.6	43.2	39.6	58.6	1.50	1.50	
900.0	10.50	42.48	896.1	47.2	43.2	64.0	1.50	1.50	
930.0	10.95	42.48	925.6	51.3	47.0	69.5	1.50	1.50	
960.0	11.40	42.48	955.0	55.6	50.9	75.4	1.50	1.50	
975.0	11.63	42.48	969.7	57.8	52.9	78.4	1.50	1.50	EOB; Inc=11.63°
990.0	11.63	42.48	984.4	60.0	55.0	81.4	0.00	0.00	
1,020.0	11.63	42.48	1,013.8	64.5	59.0	87.4	0.00	0.00	
1,050.0	11.63	42.48	1,043.2	68.9	63.1	93.5	0.00	0.00	
1,080.0	11.63	42.48	1,072.5	73.4	67.2	99.5	0.00	0.00	
1,110.0	11.63	42.48	1,101.9	77.9	71.3	105.6	0.00	0.00	
1,140.0	11.63	42.48	1,131.3	82.3	75.4	111.6	0.00	0.00	
1,170.0	11.63	42.48	1,160.7	86.8	79.4	117.6	0.00	0.00	
1,200.0	11.63	42.48	1,190.1	91.2	83.5	123.7	0.00	0.00	
1,230.0	11.63	42.48	1,219.5	95.7	87.6	129.7	0.00	0.00	
1,260.0	11.63	42.48	1,248.8	100.1	91.7	135.8	0.00	0.00	
1,290.0	11.63	42.48	1,278.2	104.6	95.8	141.8	0.00	0.00	
1,320.0	11.63	42.48	1,307.6	109.1	99.9	147.9	0.00	0.00	
1,350.0	11.63	42.48	1,337.0	113.5	103.9	153.9	0.00	0.00	
1,380.0	11.63	42.48	1,366.4	118.0	108.0	160.0	0.00	0.00	
1,410.0	11.63	42.48	1,395.8	122.4	112.1	166.0	0.00	0.00	
1,440.0	11.63	42.48	1,425.2	126.9	116.2	172.1	0.00	0.00	
1,470.0	11.63	42.48	1,454.5	131.4	120.3	178.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	US EDM 2003.21 Multi Users DB	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site:	SWSE S22-T6S-R97W	North Reference:	True
Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
1,500.0	11.63	42.48	1,483.9	135.8	124.4	184.1	0.00	0.00	
1,530.0	11.63	42.48	1,513.3	140.3	128.4	190.2	0.00	0.00	
1,560.0	11.63	42.48	1,542.7	144.7	132.5	196.2	0.00	0.00	
1,590.0	11.63	42.48	1,572.1	149.2	136.6	202.3	0.00	0.00	
1,620.0	11.63	42.48	1,601.5	153.7	140.7	208.3	0.00	0.00	
1,650.0	11.63	42.48	1,630.8	158.1	144.8	214.4	0.00	0.00	
1,680.0	11.63	42.48	1,660.2	162.6	148.8	220.4	0.00	0.00	
1,710.0	11.63	42.48	1,689.6	167.0	152.9	226.5	0.00	0.00	
1,740.0	11.63	42.48	1,719.0	171.5	157.0	232.5	0.00	0.00	
1,770.0	11.63	42.48	1,748.4	175.9	161.1	238.6	0.00	0.00	
1,800.0	11.63	42.48	1,777.8	180.4	165.2	244.6	0.00	0.00	
1,830.0	11.63	42.48	1,807.2	184.9	169.3	250.6	0.00	0.00	
1,860.0	11.63	42.48	1,836.5	189.3	173.3	256.7	0.00	0.00	
1,890.0	11.63	42.48	1,865.9	193.8	177.4	262.7	0.00	0.00	
1,920.0	11.63	42.48	1,895.3	198.2	181.5	268.8	0.00	0.00	
1,950.0	11.63	42.48	1,924.7	202.7	185.6	274.8	0.00	0.00	
1,980.0	11.63	42.48	1,954.1	207.2	189.7	280.9	0.00	0.00	
2,010.0	11.63	42.48	1,983.5	211.6	193.8	286.9	0.00	0.00	
2,040.0	11.63	42.48	2,012.8	216.1	197.8	293.0	0.00	0.00	
2,070.0	11.63	42.48	2,042.2	220.5	201.9	299.0	0.00	0.00	
2,100.0	11.63	42.48	2,071.6	225.0	206.0	305.1	0.00	0.00	
2,130.0	11.63	42.48	2,101.0	229.5	210.1	311.1	0.00	0.00	
2,158.6	11.63	42.48	2,129.0	233.7	214.0	316.9	0.00	0.00	Wasatch
2,160.0	11.63	42.48	2,130.4	233.9	214.2	317.1	0.00	0.00	
2,190.0	11.63	42.48	2,159.8	238.4	218.3	323.2	0.00	0.00	
2,220.0	11.63	42.48	2,189.2	242.8	222.3	329.2	0.00	0.00	
2,250.0	11.63	42.48	2,218.5	247.3	226.4	335.3	0.00	0.00	
2,280.0	11.63	42.48	2,247.9	251.7	230.5	341.3	0.00	0.00	
2,310.0	11.63	42.48	2,277.3	256.2	234.6	347.4	0.00	0.00	
2,340.0	11.63	42.48	2,306.7	260.7	238.7	353.4	0.00	0.00	
2,370.0	11.63	42.48	2,336.1	265.1	242.7	359.5	0.00	0.00	
2,400.0	11.63	42.48	2,365.5	269.6	246.8	365.5	0.00	0.00	
2,430.0	11.63	42.48	2,394.8	274.0	250.9	371.6	0.00	0.00	
2,460.0	11.63	42.48	2,424.2	278.5	255.0	377.6	0.00	0.00	
2,490.0	11.63	42.48	2,453.6	283.0	259.1	383.6	0.00	0.00	

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
OXY 22-5D (OXY 22 Pa	0.00	0.00	8,949.0	928.8	850.4	1,620,193.73	2,238,593.96	39.505150	-108.198867
- plan misses target center by 6554.2ft at 2490.0ft MD (2453.6 TVD, 283.0 N, 259.1 E)									
- Rectangle (sides W200.0 H100.0 D0.0)									
OXY 22-5D (OXY 22 Pa	0.00	0.00	7,099.0	928.8	850.4	1,620,193.73	2,238,593.96	39.505150	-108.198867
- plan misses target center by 4727.2ft at 2490.0ft MD (2453.6 TVD, 283.0 N, 259.1 E)									
- Point									

Cathedral Energy Services

Planning Report

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Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
2,500.0	11.63	42.48	2,463.4	284.4	260.4	385.7	0.00	0.00	
2,600.0	11.63	42.48	2,561.4	299.3	274.0	405.8	0.00	0.00	
2,700.0	11.63	42.48	2,659.3	314.2	287.7	426.0	0.00	0.00	
2,800.0	11.63	42.48	2,757.3	329.0	301.3	446.1	0.00	0.00	
2,900.0	11.63	42.48	2,855.2	343.9	314.9	466.3	0.00	0.00	
3,000.0	11.63	42.48	2,953.2	358.8	328.5	486.4	0.00	0.00	
3,100.0	11.63	42.48	3,051.1	373.6	342.1	506.6	0.00	0.00	
3,200.0	11.63	42.48	3,149.0	388.5	355.7	526.7	0.00	0.00	
3,300.0	11.63	42.48	3,247.0	403.3	369.3	546.9	0.00	0.00	
3,400.0	11.63	42.48	3,344.9	418.2	382.9	567.0	0.00	0.00	
3,500.0	11.63	42.48	3,442.9	433.1	396.5	587.2	0.00	0.00	
3,600.0	11.63	42.48	3,540.8	447.9	410.1	607.3	0.00	0.00	
3,700.0	11.63	42.48	3,638.8	462.8	423.7	627.5	0.00	0.00	
3,800.0	11.63	42.48	3,736.7	477.7	437.3	647.6	0.00	0.00	
3,900.0	11.63	42.48	3,834.7	492.5	451.0	667.8	0.00	0.00	
4,000.0	11.63	42.48	3,932.6	507.4	464.6	687.9	0.00	0.00	
4,100.0	11.63	42.48	4,030.6	522.2	478.2	708.1	0.00	0.00	
4,200.0	11.63	42.48	4,128.5	537.1	491.8	728.2	0.00	0.00	
4,241.3	11.63	42.48	4,169.0	543.2	497.4	736.6	0.00	0.00	Ft Union
4,300.0	11.63	42.48	4,226.5	552.0	505.4	748.4	0.00	0.00	
4,400.0	11.63	42.48	4,324.4	566.8	519.0	768.5	0.00	0.00	
4,500.0	11.63	42.48	4,422.4	581.7	532.6	788.7	0.00	0.00	
4,600.0	11.63	42.48	4,520.3	596.6	546.2	808.8	0.00	0.00	
4,700.0	11.63	42.48	4,618.3	611.4	559.8	829.0	0.00	0.00	
4,751.8	11.63	42.48	4,669.0	619.1	566.9	839.4	0.00	0.00	Base Ft Union
4,800.0	11.63	42.48	4,716.2	626.3	573.4	849.1	0.00	0.00	
4,900.0	11.63	42.48	4,814.2	641.1	587.0	869.3	0.00	0.00	
5,000.0	11.63	42.48	4,912.1	656.0	600.6	889.4	0.00	0.00	
5,100.0	11.63	42.48	5,010.1	670.9	614.2	909.6	0.00	0.00	
5,200.0	11.63	42.48	5,108.0	685.7	627.9	929.7	0.00	0.00	
5,300.0	11.63	42.48	5,206.0	700.6	641.5	949.9	0.00	0.00	
5,400.0	11.63	42.48	5,303.9	715.5	655.1	970.1	0.00	0.00	
5,500.0	11.63	42.48	5,401.9	730.3	668.7	990.2	0.00	0.00	
5,600.0	11.63	42.48	5,499.8	745.2	682.3	1,010.4	0.00	0.00	
5,700.0	11.63	42.48	5,597.8	760.0	695.9	1,030.5	0.00	0.00	
5,800.0	11.63	42.48	5,695.7	774.9	709.5	1,050.7	0.00	0.00	
5,900.0	11.63	42.48	5,793.7	789.8	723.1	1,070.8	0.00	0.00	
6,000.0	11.63	42.48	5,891.6	804.6	736.7	1,091.0	0.00	0.00	
6,007.5	11.63	42.48	5,899.0	805.8	737.7	1,092.5	0.00	0.00	Ohio Creek
6,100.0	11.63	42.48	5,989.6	819.5	750.3	1,111.1	0.00	0.00	
6,200.0	11.63	42.48	6,087.5	834.4	763.9	1,131.3	0.00	0.00	
6,211.7	11.63	42.48	6,099.0	836.1	765.5	1,133.6	0.00	0.00	Williams Fork
6,300.0	11.63	42.48	6,185.5	849.2	777.5	1,151.4	0.00	0.00	
6,400.0	11.63	42.48	6,283.4	864.1	791.2	1,171.6	0.00	0.00	
6,446.8	11.63	42.48	6,329.3	871.0	797.5	1,181.0	0.00	0.00	Start Drop -1.50
6,500.0	10.83	42.48	6,381.4	878.7	804.5	1,191.4	1.50	-1.50	
6,600.0	9.33	42.48	6,479.9	891.6	816.3	1,208.9	1.50	-1.50	
6,700.0	7.83	42.48	6,578.8	902.6	826.4	1,223.8	1.50	-1.50	
6,800.0	6.33	42.48	6,678.0	911.7	834.7	1,236.1	1.50	-1.50	
6,900.0	4.83	42.48	6,777.5	918.8	841.3	1,245.8	1.50	-1.50	
7,000.0	3.33	42.48	6,877.3	924.1	846.1	1,252.9	1.50	-1.50	
7,100.0	1.83	42.48	6,977.2	927.4	849.1	1,257.4	1.50	-1.50	

Cathedral Energy Services

Planning Report

Database:	US EDM 2003.21 Multi Users DB	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site:	SWSE S22-T6S-R97W	North Reference:	True
Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,200.0	0.33	42.48	7,077.1	928.8	850.4	1,259.3	1.50	-1.50	
7,221.9	0.00	0.00	7,099.0	928.8	850.4	1,259.4	1.50	-1.50	EOD; Inc=0° - Approx TOG - OXY 22-5D (OXY
7,300.0	0.00	0.00	7,177.1	928.8	850.4	1,259.4	0.00	0.00	
7,400.0	0.00	0.00	7,277.1	928.8	850.4	1,259.4	0.00	0.00	
7,500.0	0.00	0.00	7,377.1	928.8	850.4	1,259.4	0.00	0.00	
7,600.0	0.00	0.00	7,477.1	928.8	850.4	1,259.4	0.00	0.00	
7,700.0	0.00	0.00	7,577.1	928.8	850.4	1,259.4	0.00	0.00	
7,800.0	0.00	0.00	7,677.1	928.8	850.4	1,259.4	0.00	0.00	
7,900.0	0.00	0.00	7,777.1	928.8	850.4	1,259.4	0.00	0.00	
8,000.0	0.00	0.00	7,877.1	928.8	850.4	1,259.4	0.00	0.00	
8,100.0	0.00	0.00	7,977.1	928.8	850.4	1,259.4	0.00	0.00	
8,200.0	0.00	0.00	8,077.1	928.8	850.4	1,259.4	0.00	0.00	
8,300.0	0.00	0.00	8,177.1	928.8	850.4	1,259.4	0.00	0.00	
8,400.0	0.00	0.00	8,277.1	928.8	850.4	1,259.4	0.00	0.00	
8,500.0	0.00	0.00	8,377.1	928.8	850.4	1,259.4	0.00	0.00	
8,571.9	0.00	0.00	8,449.0	928.8	850.4	1,259.4	0.00	0.00	Cameo
8,600.0	0.00	0.00	8,477.1	928.8	850.4	1,259.4	0.00	0.00	
8,700.0	0.00	0.00	8,577.1	928.8	850.4	1,259.4	0.00	0.00	
8,800.0	0.00	0.00	8,677.1	928.8	850.4	1,259.4	0.00	0.00	
8,900.0	0.00	0.00	8,777.1	928.8	850.4	1,259.4	0.00	0.00	
8,921.9	0.00	0.00	8,799.0	928.8	850.4	1,259.4	0.00	0.00	Rollins SS
9,000.0	0.00	0.00	8,877.1	928.8	850.4	1,259.4	0.00	0.00	
9,071.9	0.00	0.00	8,949.0	928.8	850.4	1,259.4	0.00	0.00	TD at 9071.9 - OXY 22-5D (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 22-5D (OXY 22 Pa	0.00	0.00	8,949.0	928.8	850.4	1,620,193.73	2,238,593.96	39.505150	-108.198867
- plan hits target center									
- Rectangle (sides W100.0 H200.0 D0.0)									
OXY 22-5D (OXY 22 Pa	0.00	0.00	7,099.0	928.8	850.4	1,620,193.73	2,238,593.96	39.505150	-108.198867
- plan hits target center									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,158.6	2,129.0	Wasatch		0.00	
4,241.3	4,169.0	Ft Union		0.00	
4,751.8	4,669.0	Base Ft Union		0.00	
6,007.5	5,899.0	Ohio Creek		0.00	
6,211.7	6,099.0	Williams Fork		0.00	
7,221.9	7,099.0	Approx TOG		0.00	
8,571.9	8,449.0	Cameo		0.00	
8,921.9	8,799.0	Rollins SS		0.00	

Cathedral Energy Services

Planning Report

Database:	US EDM 2003.21 Multi Users DB	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site:	SWSE S22-T6S-R97W	North Reference:	True
Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
975.0	969.7	57.8	52.9	EOB; Inc=11.63°
6,446.8	6,329.3	871.0	797.5	Start Drop -1.50
7,221.9	7,099.0	928.8	850.4	EOD; Inc=0°
9,071.9	8,949.0	928.8	850.4	TD at 9071.9

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum 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	9,071.9	Plan #1 (DD)	MWD	Geolink MWD	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)		Separation Factor	Warning
SWSE S22-T6S-R97W						
OXY 22-10D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	45.8	45.2	70.947	CC, ES
OXY 22-10D (OXY 22 Pad) - DD - Plan #1	600.0	596.7	70.3	68.3	34.543	SF
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	31.5	30.8	48.749	CC, ES
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	500.0	498.9	44.8	43.1	26.347	SF
OXY 22-12D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	17.5	16.9	27.097	CC, ES
OXY 22-12D (OXY 22 Pad) - DD - Plan #1	400.0	399.8	22.6	21.2	16.773	SF
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	9.8	9.2	15.203	CC
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	10.0	9.0	10.012	ES
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	400.0	399.7	12.3	10.9	9.067	SF
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	419.5	418.9	15.8	14.4	11.111	CC, ES
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	500.0	498.9	17.0	15.2	9.800	SF
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	358.4	357.3	31.5	30.3	26.260	CC
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	400.0	398.5	31.6	30.3	23.445	ES
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	700.0	694.5	43.2	40.7	16.892	SF
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	460.9	458.2	45.4	43.9	29.003	CC
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	500.0	496.8	45.5	43.8	26.652	ES
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	800.0	791.0	59.0	56.0	19.639	SF
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	59.9	59.3	92.800	CC, ES
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	1,300.0	1,290.9	191.5	186.1	35.749	SF
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	44.7	44.1	69.269	CC, ES
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	1,700.0	1,693.9	204.4	196.9	27.081	SF
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	29.9	29.2	46.245	CC, ES
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	900.0	903.5	57.8	54.4	17.215	SF
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	14.7	14.1	22.766	CC, ES
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	4,800.0	4,798.9	224.2	197.6	8.432	SF
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	14.9	14.2	23.001	CC
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	700.0	698.0	15.3	12.9	6.335	ES
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	1,000.0	996.8	17.3	13.5	4.496	SF
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	380.0	378.6	30.0	28.7	23.598	CC
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	600.0	596.8	30.3	28.2	14.826	ES
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	1,100.0	1,092.4	40.0	35.5	8.849	SF
OXY 22-8D (OXY 22 Pad) - DD - Plan #1	522.8	519.1	44.9	43.2	25.405	CC
OXY 22-8D (OXY 22 Pad) - DD - Plan #1	600.0	595.3	45.0	43.0	22.073	ES
OXY 22-8D (OXY 22 Pad) - DD - Plan #1	1,200.0	1,186.4	66.2	61.1	12.870	SF
OXY 22-9D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	60.5	59.8	93.629	CC, ES
OXY 22-9D (OXY 22 Pad) - DD - Plan #1	600.0	595.1	86.3	84.3	42.538	SF

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	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							
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	-131.29	-30.2	-34.4	45.8				
100.0	100.0	100.0	100.0	0.1	0.1	-131.29	-30.2	-34.4	45.8	45.5	0.30	154.414	
200.0	200.0	200.0	200.0	0.3	0.3	-131.29	-30.2	-34.4	45.8	45.2	0.65	70.947 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	-173.94	-30.2	-34.4	47.1	46.1	0.99	47.371	
400.0	399.9	399.9	399.9	0.7	0.7	-174.40	-30.2	-34.4	51.0	49.7	1.34	37.994	
500.0	499.7	498.6	498.6	0.9	0.8	-174.13	-30.2	-35.7	58.5	56.8	1.69	34.609	
600.0	599.3	596.7	596.6	1.1	1.0	-172.70	-30.0	-39.5	70.3	68.3	2.04	34.543 SF	
700.0	698.6	693.8	693.6	1.4	1.2	-170.81	-29.8	-45.7	86.7	84.3	2.39	36.330	
800.0	797.5	791.8	791.2	1.7	1.4	-169.31	-29.5	-53.2	106.6	103.9	2.74	38.879	
900.0	896.1	889.2	888.4	2.0	1.6	-168.50	-29.2	-60.6	129.1	126.0	3.10	41.655	
975.0	969.7	962.0	960.9	2.3	1.8	-168.17	-28.9	-66.2	147.6	144.2	3.37	43.840	
1,000.0	994.2	986.1	985.0	2.4	1.8	-168.12	-28.9	-68.0	154.0	150.5	3.46	44.530	
1,100.0	1,092.1	1,082.8	1,081.3	2.7	2.0	-167.93	-28.6	-75.4	179.6	175.7	3.82	46.949	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	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 (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	-125.35	-18.2	-25.7	31.5					
100.0	100.0	100.0	100.0	0.1	0.1	-125.35	-18.2	-25.7	31.5	31.2	0.30	106.100		
200.0	200.0	200.0	200.0	0.3	0.3	-125.35	-18.2	-25.7	31.5	30.8	0.65	48.749 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-168.30	-18.2	-25.7	32.8	31.8	0.99	32.936		
400.0	399.9	399.6	399.6	0.7	0.7	-167.62	-17.5	-26.7	37.0	35.7	1.34	27.553		
500.0	499.7	498.9	498.8	0.9	0.9	-164.70	-15.2	-29.9	44.8	43.1	1.70	26.347 SF		
600.0	599.3	597.6	597.3	1.1	1.1	-161.03	-11.6	-35.2	56.3	54.2	2.07	27.155		
700.0	698.6	696.1	695.4	1.4	1.3	-157.79	-6.7	-42.2	71.3	68.9	2.46	29.016		
800.0	797.5	794.5	793.4	1.7	1.5	-156.18	-1.7	-49.4	89.0	86.2	2.85	31.178		
900.0	896.1	892.5	891.0	2.0	1.7	-155.64	3.3	-56.6	109.1	105.8	3.26	33.462		
975.0	969.7	965.6	963.9	2.3	1.9	-155.64	7.1	-61.9	125.7	122.1	3.57	35.228		
1,000.0	994.2	989.9	988.1	2.4	1.9	-155.72	8.3	-63.7	131.4	127.7	3.67	35.790		
1,100.0	1,092.1	1,087.3	1,085.0	2.7	2.1	-155.96	13.3	-70.8	154.4	150.3	4.09	37.733		
1,200.0	1,190.1	1,184.6	1,182.0	3.1	2.4	-156.14	18.3	-77.9	177.4	172.9	4.51	39.294		
1,300.0	1,288.0	1,281.9	1,278.9	3.5	2.6	-156.28	23.2	-85.1	200.4	195.4	4.94	40.572		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-12D (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		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-110.72	-6.2	-16.4	17.5					
100.0	100.0	100.0	100.0	0.1	0.1	-110.72	-6.2	-16.4	17.5	17.2	0.30	58.975		
200.0	200.0	200.0	200.0	0.3	0.3	-110.72	-6.2	-16.4	17.5	16.9	0.65	27.097 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-155.00	-6.2	-16.4	18.7	17.7	1.00	18.769		
400.0	399.9	399.8	399.8	0.7	0.7	-155.99	-5.2	-17.2	22.6	21.2	1.35	16.773 SF		
500.0	499.7	499.3	499.3	0.9	0.9	-153.76	-2.1	-19.6	29.5	27.8	1.71	17.297		
600.0	599.3	598.5	598.2	1.1	1.1	-150.52	3.0	-23.5	39.7	37.6	2.09	18.970		
700.0	698.6	697.2	696.5	1.4	1.3	-147.43	10.1	-29.0	53.0	50.5	2.50	21.177		
800.0	797.5	795.2	793.8	1.7	1.5	-144.83	19.1	-36.0	69.7	66.7	2.95	23.598		
900.0	896.1	893.3	891.2	2.0	1.8	-143.64	28.8	-43.6	88.8	85.4	3.42	25.955		
975.0	969.7	966.7	964.0	2.3	2.0	-143.56	36.0	-49.2	104.6	100.8	3.79	27.629		
1,000.0	994.2	991.1	988.2	2.4	2.0	-143.65	38.4	-51.1	110.0	106.1	3.91	28.154		
1,100.0	1,092.1	1,088.7	1,085.0	2.7	2.3	-143.95	48.1	-58.6	131.8	127.4	4.40	29.931		
1,200.0	1,190.1	1,186.3	1,181.8	3.1	2.5	-144.17	57.7	-66.1	153.6	148.7	4.90	31.315		
1,300.0	1,288.0	1,283.9	1,278.6	3.5	2.8	-144.33	67.4	-73.6	175.3	169.9	5.41	32.420		
1,400.0	1,386.0	1,381.5	1,375.5	3.9	3.1	-144.45	77.0	-81.1	197.1	191.2	5.92	33.321		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-13D (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	-50.90	6.2	-7.6	9.8					
100.0	100.0	100.0	100.0	0.1	0.1	-50.90	6.2	-7.6	9.8	9.5	0.30	33.089		
200.0	200.0	200.0	200.0	0.3	0.3	-50.90	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	-50.90	6.2	-7.6	9.8	9.2	0.65	15.201		
300.0	300.0	300.0	300.0	0.5	0.5	-100.89	6.2	-7.6	10.0	9.0	1.00	10.012 ES		
400.0	399.9	399.7	399.7	0.7	0.7	-115.99	7.3	-8.2	12.3	10.9	1.36	9.067 SF		
500.0	499.7	499.2	499.1	0.9	0.9	-125.81	10.7	-10.1	18.2	16.5	1.73	10.548		
600.0	599.3	598.5	598.2	1.1	1.1	-130.14	16.4	-13.3	27.4	25.3	2.12	12.937		
700.0	698.6	697.3	696.6	1.4	1.3	-131.74	24.2	-17.6	39.7	37.2	2.55	15.594		
800.0	797.5	795.5	794.1	1.7	1.5	-132.15	34.3	-23.2	55.0	52.0	3.02	18.238		
900.0	896.1	893.0	890.7	2.0	1.8	-132.04	46.4	-29.9	73.3	69.8	3.54	20.732		
975.0	969.7	965.7	962.3	2.3	2.0	-131.80	56.8	-35.7	88.9	84.9	3.95	22.492		
1,000.0	994.2	990.0	986.3	2.4	2.1	-131.76	60.5	-37.7	94.4	90.3	4.10	23.046		
1,100.0	1,092.1	1,087.6	1,082.3	2.7	2.4	-131.62	75.4	-46.0	116.3	111.6	4.68	24.874		
1,200.0	1,190.1	1,185.1	1,178.4	3.1	2.7	-131.53	90.3	-54.2	138.3	133.0	5.27	26.252		
1,300.0	1,288.0	1,282.7	1,274.4	3.5	3.1	-131.46	105.2	-62.5	160.2	154.4	5.86	27.319		
1,400.0	1,386.0	1,380.2	1,370.5	3.9	3.4	-131.41	120.1	-70.8	182.2	175.7	6.47	28.168		
1,500.0	1,483.9	1,477.8	1,466.6	4.3	3.7	-131.37	135.0	-79.0	204.1	197.0	7.07	28.857		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	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: 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	2.66	18.2	0.8	18.2					
100.0	100.0	100.0	100.0	0.1	0.1	2.66	18.2	0.8	18.2	17.9	0.30	61.447		
200.0	200.0	200.0	200.0	0.3	0.3	2.66	18.2	0.8	18.2	17.6	0.65	28.232		
300.0	300.0	300.0	300.0	0.5	0.5	-42.61	18.2	0.8	17.2	16.3	1.00	17.322		
400.0	399.9	399.5	399.5	0.7	0.7	-54.00	19.4	0.4	15.9	14.5	1.35	11.745		
419.5	419.3	418.9	418.8	0.7	0.7	-57.49	19.9	0.1	15.8	14.4	1.42	11.111 CC, ES		
500.0	499.7	498.9	498.8	0.9	0.9	-74.62	23.0	-1.1	17.0	15.2	1.73	9.800 SF		
600.0	599.3	598.1	597.8	1.1	1.1	-94.59	29.0	-3.5	22.3	20.2	2.14	10.407		
700.0	698.6	696.9	696.2	1.4	1.3	-107.35	37.3	-6.9	32.0	29.4	2.59	12.336		
800.0	797.5	795.2	793.8	1.7	1.5	-114.46	47.9	-11.3	45.2	42.1	3.08	14.681		
900.0	896.1	893.0	890.6	2.0	1.8	-118.43	60.7	-16.5	61.5	57.9	3.61	17.023		
975.0	969.7	965.9	962.5	2.3	2.0	-120.25	71.8	-21.0	75.6	71.6	4.05	18.678		
1,000.0	994.2	990.1	986.3	2.4	2.1	-120.73	75.8	-22.6	80.6	76.4	4.20	19.216		
1,100.0	1,092.1	1,086.6	1,081.1	2.7	2.5	-121.40	92.9	-29.7	101.5	96.7	4.82	21.070		
1,200.0	1,190.1	1,182.9	1,175.0	3.1	2.8	-120.88	112.2	-37.5	123.8	118.3	5.47	22.610		
1,300.0	1,288.0	1,280.3	1,269.9	3.5	3.2	-120.24	132.5	-45.8	146.5	140.3	6.15	23.829		
1,400.0	1,386.0	1,377.6	1,364.8	3.9	3.6	-119.76	152.7	-54.1	169.2	162.3	6.82	24.788		
1,500.0	1,483.9	1,475.0	1,459.7	4.3	4.0	-119.40	173.0	-62.3	191.9	184.4	7.51	25.558		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	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			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	17.61	30.2	9.6	31.7					
100.0	100.0	100.0	100.0	0.1	0.1	17.61	30.2	9.6	31.7	31.4	0.30	106.900		
200.0	200.0	200.0	200.0	0.3	0.3	17.61	30.2	9.6	31.7	31.1	0.65	49.116		
300.0	300.0	299.3	299.3	0.5	0.5	-27.24	31.5	9.2	31.6	30.6	0.99	31.779		
358.4	358.4	357.3	357.3	0.6	0.6	-30.85	33.3	8.6	31.5	30.3	1.20	26.260 CC		
400.0	399.9	398.5	398.4	0.7	0.7	-34.39	35.1	8.0	31.6	30.3	1.35	23.445 ES		
500.0	499.7	497.5	497.2	0.9	0.9	-45.92	41.2	5.9	32.7	31.0	1.71	19.073		
600.0	599.3	596.2	595.5	1.1	1.1	-59.98	49.7	3.1	36.2	34.1	2.11	17.164		
700.0	698.6	694.5	693.1	1.4	1.4	-73.56	60.5	-0.6	43.2	40.7	2.56	16.892 SF		
800.0	797.5	792.3	789.9	1.7	1.6	-84.57	73.7	-5.0	54.1	51.0	3.08	17.582		
900.0	896.1	889.5	885.7	2.0	2.0	-92.68	89.1	-10.2	68.6	65.0	3.66	18.728		
975.0	969.7	962.0	956.9	2.3	2.2	-97.20	102.0	-14.5	81.7	77.5	4.14	19.708		
1,000.0	994.2	986.0	980.4	2.4	2.3	-98.49	106.6	-16.1	86.4	82.1	4.31	20.061		
1,100.0	1,092.1	1,081.9	1,074.1	2.7	2.7	-101.91	126.3	-22.7	106.7	101.8	4.97	21.462		
1,200.0	1,190.1	1,177.2	1,166.5	3.1	3.1	-103.48	148.1	-30.0	129.1	123.5	5.66	22.808		
1,300.0	1,288.0	1,271.7	1,257.7	3.5	3.6	-103.94	171.8	-38.0	153.3	146.9	6.36	24.094		
1,400.0	1,386.0	1,368.3	1,350.5	3.9	4.1	-103.98	197.3	-46.5	178.4	171.3	7.08	25.205		
1,500.0	1,483.9	1,465.1	1,443.5	4.3	4.6	-104.01	222.8	-55.1	203.5	195.7	7.80	26.092		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	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		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	22.97	42.6	18.1	46.3					
100.0	100.0	100.0	100.0	0.1	0.1	22.97	42.6	18.1	46.3	46.0	0.30	155.995		
200.0	200.0	200.0	200.0	0.3	0.3	22.97	42.6	18.1	46.3	45.6	0.65	71.673		
300.0	300.0	299.1	299.1	0.5	0.5	-21.09	43.8	17.7	46.1	45.1	0.99	46.327		
400.0	399.9	398.0	397.9	0.7	0.7	-25.89	47.5	16.5	45.6	44.2	1.35	33.846		
460.9	460.7	458.2	458.0	0.8	0.8	-30.42	50.9	15.4	45.4	43.9	1.57	29.003 CC		
500.0	499.7	496.8	496.5	0.9	0.9	-33.96	53.6	14.6	45.5	43.8	1.71	26.652 ES		
600.0	599.3	595.3	594.6	1.1	1.1	-44.91	62.1	11.9	47.0	44.9	2.09	22.483		
700.0	698.6	693.4	692.0	1.4	1.4	-57.38	73.0	8.5	51.1	48.6	2.51	20.361		
800.0	797.5	791.0	788.6	1.7	1.6	-69.43	86.1	4.4	59.0	56.0	3.00	19.639 SF		
900.0	896.1	888.0	884.3	2.0	2.0	-79.64	101.6	-0.5	70.7	67.2	3.57	19.791		
975.0	969.7	960.3	955.3	2.3	2.2	-85.82	114.6	-4.6	82.1	78.0	4.05	20.247		
1,000.0	994.2	984.3	978.8	2.4	2.3	-87.62	119.2	-6.0	86.3	82.1	4.22	20.462		
1,100.0	1,092.1	1,080.1	1,072.4	2.7	2.7	-92.87	138.9	-12.2	105.1	100.2	4.89	21.510		
1,200.0	1,190.1	1,175.3	1,164.7	3.1	3.1	-95.84	160.8	-19.1	126.5	120.9	5.57	22.696		
1,300.0	1,288.0	1,269.7	1,255.8	3.5	3.6	-97.36	184.6	-26.6	150.0	143.7	6.27	23.905		
1,400.0	1,386.0	1,363.4	1,345.5	3.9	4.1	-97.97	210.3	-34.7	175.4	168.4	6.99	25.104		
1,500.0	1,483.9	1,456.1	1,433.5	4.3	4.6	-97.99	237.9	-43.3	202.6	194.9	7.71	26.289		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design		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	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	-143.94	-48.4	-35.3	59.9								
100.0	100.0	100.0	100.0	0.1	0.1	-143.94	-48.4	-35.3	59.9	59.6	0.30	201.977					
200.0	200.0	200.0	200.0	0.3	0.3	-143.94	-48.4	-35.3	59.9	59.3	0.65	92.800	CC, ES				
300.0	300.0	300.0	300.0	0.5	0.5	173.71	-48.4	-35.3	61.2	60.2	0.99	61.559					
400.0	399.9	399.9	399.9	0.7	0.7	174.09	-48.4	-35.3	65.1	63.8	1.34	48.500					
500.0	499.7	500.2	500.2	0.9	0.8	173.61	-48.9	-34.0	71.3	69.6	1.69	42.107					
600.0	599.3	600.4	600.3	1.1	1.0	171.59	-50.2	-30.3	79.3	77.3	2.05	38.723					
700.0	698.6	700.2	699.9	1.4	1.2	168.58	-52.5	-24.2	89.5	87.1	2.42	36.973					
800.0	797.5	799.7	799.0	1.7	1.4	165.08	-55.6	-15.6	102.0	99.2	2.82	36.161					
900.0	896.1	898.6	897.2	2.0	1.7	161.45	-59.6	-4.7	117.0	113.8	3.26	35.881					
975.0	969.7	972.4	970.3	2.3	1.9	158.78	-63.1	5.0	130.1	126.4	3.62	35.894					
1,000.0	994.2	996.9	994.5	2.4	2.0	157.97	-64.3	8.4	134.7	130.9	3.75	35.914					
1,100.0	1,092.1	1,094.9	1,091.4	2.7	2.2	155.21	-69.4	22.1	153.4	149.1	4.27	35.917					
1,200.0	1,190.1	1,192.9	1,188.3	3.1	2.5	153.04	-74.4	35.9	172.3	167.5	4.81	35.849					
1,300.0	1,288.0	1,290.9	1,285.2	3.5	2.8	151.31	-79.4	49.6	191.5	186.1	5.36	35.749	SF				

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-2D (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	-144.53	-36.4	-26.0	44.7					
100.0	100.0	100.0	100.0	0.1	0.1	-144.53	-36.4	-26.0	44.7	44.4	0.30	150.762		
200.0	200.0	200.0	200.0	0.3	0.3	-144.53	-36.4	-26.0	44.7	44.1	0.65	69.269 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	173.19	-36.4	-26.0	46.0	45.0	0.99	46.279		
400.0	399.9	399.9	399.9	0.7	0.7	173.72	-36.4	-26.0	49.9	48.6	1.34	37.181		
500.0	499.7	500.6	500.6	0.9	0.8	173.36	-36.4	-24.6	55.7	54.0	1.69	32.875		
600.0	599.3	601.2	601.1	1.1	1.0	171.37	-36.4	-20.7	62.5	60.4	2.05	30.496		
700.0	698.6	701.8	701.5	1.4	1.2	168.34	-36.4	-14.0	70.5	68.1	2.42	29.161		
800.0	797.5	802.2	801.4	1.7	1.4	164.71	-36.3	-4.8	80.0	77.1	2.81	28.413		
900.0	896.1	902.4	900.9	2.0	1.7	160.85	-36.2	7.0	91.0	87.8	3.25	27.975		
975.0	969.7	976.9	974.8	2.3	1.9	158.14	-36.2	17.2	100.7	97.1	3.61	27.866		
1,000.0	994.2	1,001.6	999.2	2.4	2.0	157.41	-36.2	20.6	104.1	100.4	3.74	27.872		
1,100.0	1,092.1	1,100.5	1,097.2	2.7	2.2	154.91	-36.1	34.2	118.1	113.9	4.25	27.823		
1,200.0	1,190.1	1,199.4	1,195.1	3.1	2.5	152.94	-36.0	47.8	132.3	127.5	4.77	27.717		
1,300.0	1,288.0	1,298.3	1,293.1	3.5	2.8	151.36	-35.9	61.4	146.6	141.2	5.31	27.589		
1,400.0	1,386.0	1,397.2	1,391.1	3.9	3.1	150.05	-35.9	75.0	160.9	155.1	5.86	27.454		
1,500.0	1,483.9	1,496.1	1,489.0	4.3	3.3	148.96	-35.8	88.5	175.4	169.0	6.42	27.322		
1,600.0	1,581.9	1,595.0	1,587.0	4.7	3.6	148.04	-35.7	102.1	189.9	182.9	6.98	27.197		
1,700.0	1,679.8	1,693.9	1,684.9	5.1	3.9	147.25	-35.6	115.7	204.4	196.9	7.55	27.081 SF		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	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							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	-144.80	-24.4	-17.2	29.9					
100.0	100.0	100.0	100.0	0.1	0.1	-144.80	-24.4	-17.2	29.9	29.6	0.30	100.651		
200.0	200.0	200.0	200.0	0.3	0.3	-144.80	-24.4	-17.2	29.9	29.2	0.65	46.245	CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	173.02	-24.4	-17.2	31.2	30.2	0.99	31.330		
400.0	399.9	400.7	400.6	0.7	0.7	172.57	-23.9	-16.0	34.0	32.6	1.34	25.261		
500.0	499.7	501.4	501.3	0.9	0.9	170.38	-22.6	-12.2	37.2	35.5	1.70	21.926		
600.0	599.3	602.1	601.7	1.1	1.1	166.95	-20.3	-6.0	41.1	39.0	2.06	19.918		
700.0	698.6	702.7	702.0	1.4	1.3	162.74	-17.1	2.7	45.6	43.2	2.45	18.632		
800.0	797.5	803.4	801.9	1.7	1.5	158.13	-13.0	13.9	51.1	48.2	2.88	17.749		
900.0	896.1	903.5	901.0	2.0	1.8	153.78	-8.1	27.1	57.8	54.4	3.36	17.215	SF	
975.0	969.7	978.2	975.0	2.3	2.0	151.71	-4.4	37.1	64.4	60.7	3.73	17.244		
1,000.0	994.2	1,003.0	999.6	2.4	2.1	151.23	-3.2	40.5	66.8	63.0	3.86	17.302		
1,100.0	1,092.1	1,102.5	1,098.0	2.7	2.4	149.60	1.7	53.9	76.6	72.2	4.38	17.463		
1,200.0	1,190.1	1,202.1	1,196.5	3.1	2.7	148.34	6.6	67.3	86.4	81.5	4.92	17.554		
1,300.0	1,288.0	1,301.6	1,295.0	3.5	3.0	147.34	11.6	80.6	96.2	90.7	5.46	17.604		
1,400.0	1,386.0	1,401.1	1,393.5	3.9	3.3	146.52	16.5	94.0	106.1	100.0	6.02	17.628		
1,500.0	1,483.9	1,500.6	1,491.9	4.3	3.6	145.84	21.4	107.4	115.9	109.4	6.57	17.637		
1,600.0	1,581.9	1,600.1	1,590.4	4.7	3.9	145.27	26.3	120.8	125.8	118.7	7.13	17.637		
1,700.0	1,679.8	1,699.6	1,688.9	5.1	4.2	144.78	31.3	134.2	135.7	128.0	7.70	17.631		
1,800.0	1,777.8	1,799.1	1,787.4	5.5	4.5	144.36	36.2	147.6	145.6	137.3	8.26	17.621		
1,900.0	1,875.7	1,898.6	1,885.8	5.8	4.8	143.99	41.1	161.0	155.5	146.7	8.83	17.609		
2,000.0	1,973.7	1,998.1	1,984.3	6.2	5.1	143.67	46.0	174.4	165.4	156.0	9.40	17.596		
2,100.0	2,071.6	2,097.6	2,082.8	6.6	5.4	143.38	50.9	187.8	175.4	165.4	9.97	17.582		
2,200.0	2,169.6	2,197.1	2,181.3	7.0	5.7	143.13	55.9	201.1	185.3	174.7	10.55	17.568		
2,300.0	2,267.5	2,296.6	2,279.7	7.4	6.0	142.90	60.8	214.5	195.2	184.1	11.12	17.555		
2,400.0	2,365.5	2,396.1	2,378.2	7.8	6.3	142.69	65.7	227.9	205.1	193.4	11.69	17.541		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-4D (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		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-144.84	-12.0	-8.5	14.7					
100.0	100.0	100.0	100.0	0.1	0.1	-144.84	-12.0	-8.5	14.7	14.4	0.30	49.550		
200.0	200.0	200.0	200.0	0.3	0.3	-144.84	-12.0	-8.5	14.7	14.1	0.65	22.766 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	173.27	-12.0	-8.5	16.0	15.0	0.99	16.087		
400.0	399.9	400.4	400.4	0.7	0.7	173.38	-11.3	-7.4	18.7	17.3	1.34	13.882		
500.0	499.7	500.8	500.7	0.9	0.9	172.00	-9.0	-4.2	21.4	19.7	1.69	12.647		
600.0	599.3	601.4	601.0	1.1	1.1	169.67	-5.1	1.2	24.3	22.3	2.05	11.883		
700.0	698.6	701.9	701.2	1.4	1.3	166.73	0.2	8.8	27.5	25.0	2.41	11.374		
800.0	797.5	802.5	801.1	1.7	1.5	163.42	7.1	18.4	30.8	28.0	2.80	11.002		
900.0	896.1	903.2	900.7	2.0	1.8	159.92	15.5	30.3	34.5	31.3	3.23	10.690		
975.0	969.7	978.6	975.0	2.3	2.1	157.29	22.8	40.5	37.5	33.9	3.58	10.485		
1,000.0	994.2	1,003.5	999.6	2.4	2.1	156.55	25.3	44.0	38.6	34.9	3.70	10.446		
1,100.0	1,092.1	1,103.4	1,098.0	2.7	2.5	153.96	35.2	58.0	43.2	39.0	4.21	10.282		
1,200.0	1,190.1	1,203.3	1,196.4	3.1	2.8	151.88	45.2	71.9	47.9	43.2	4.73	10.119		
1,300.0	1,288.0	1,303.2	1,294.8	3.5	3.1	150.16	55.1	85.9	52.6	47.3	5.28	9.964		
1,400.0	1,386.0	1,403.0	1,393.2	3.9	3.5	148.73	65.1	99.9	57.4	51.5	5.84	9.823		
1,500.0	1,483.9	1,502.9	1,491.6	4.3	3.8	147.52	75.0	113.9	62.2	55.8	6.41	9.695		
1,600.0	1,581.9	1,602.8	1,589.9	4.7	4.1	146.48	85.0	127.9	67.0	60.0	6.99	9.579		
1,700.0	1,679.8	1,702.7	1,688.3	5.1	4.5	145.58	94.9	141.9	71.8	64.2	7.58	9.476		
1,800.0	1,777.8	1,802.5	1,786.7	5.5	4.8	144.79	104.9	155.8	76.7	68.5	8.17	9.384		
1,900.0	1,875.7	1,902.4	1,885.1	5.8	5.2	144.10	114.8	169.8	81.5	72.7	8.76	9.301		
2,000.0	1,973.7	2,002.3	1,983.5	6.2	5.5	143.49	124.7	183.8	86.4	77.0	9.36	9.226		
2,100.0	2,071.6	2,102.2	2,081.9	6.6	5.9	142.94	134.7	197.8	91.3	81.3	9.96	9.158		
2,200.0	2,169.6	2,202.1	2,180.3	7.0	6.2	142.45	144.6	211.8	96.1	85.6	10.57	9.097		
2,300.0	2,267.5	2,301.9	2,278.7	7.4	6.6	142.00	154.6	225.8	101.0	89.9	11.17	9.041		
2,400.0	2,365.5	2,401.8	2,377.1	7.8	6.9	141.60	164.5	239.8	105.9	94.1	11.78	8.990		
2,500.0	2,463.4	2,501.7	2,475.5	8.2	7.3	141.23	174.5	253.7	110.8	98.4	12.39	8.944		
2,600.0	2,561.4	2,601.6	2,573.9	8.6	7.6	140.89	184.4	267.7	115.7	102.7	13.00	8.901		
2,700.0	2,659.3	2,701.4	2,672.3	9.0	7.9	140.58	194.4	281.7	120.6	107.0	13.61	8.861		
2,800.0	2,757.3	2,801.3	2,770.7	9.4	8.3	140.30	204.3	295.7	125.6	111.3	14.23	8.825		
2,900.0	2,855.2	2,901.2	2,869.0	9.8	8.6	140.03	214.3	309.7	130.5	115.6	14.84	8.791		
3,000.0	2,953.2	3,001.1	2,967.4	10.2	9.0	139.79	224.2	323.7	135.4	119.9	15.46	8.760		
3,100.0	3,051.1	3,100.9	3,065.8	10.6	9.3	139.56	234.2	337.6	140.3	124.2	16.07	8.731		
3,200.0	3,149.0	3,200.8	3,164.2	11.0	9.7	139.35	244.1	351.6	145.2	128.5	16.69	8.704		
3,300.0	3,247.0	3,300.7	3,262.6	11.4	10.0	139.15	254.0	365.6	150.2	132.9	17.30	8.678		
3,400.0	3,344.9	3,400.6	3,361.0	11.7	10.4	138.96	264.0	379.6	155.1	137.2	17.92	8.655		
3,500.0	3,442.9	3,500.5	3,459.4	12.1	10.7	138.79	273.9	393.6	160.0	141.5	18.54	8.632		
3,600.0	3,540.8	3,600.3	3,557.8	12.5	11.1	138.63	283.9	407.6	164.9	145.8	19.15	8.611		
3,700.0	3,638.8	3,700.2	3,656.2	12.9	11.4	138.47	293.8	421.5	169.9	150.1	19.77	8.592		
3,800.0	3,736.7	3,800.1	3,754.6	13.3	11.8	138.33	303.8	435.5	174.8	154.4	20.39	8.573		
3,900.0	3,834.7	3,900.0	3,853.0	13.7	12.1	138.19	313.7	449.5	179.7	158.7	21.01	8.555		
4,000.0	3,932.6	3,999.8	3,951.4	14.1	12.5	138.06	323.7	463.5	184.7	163.0	21.63	8.539		
4,100.0	4,030.6	4,099.7	4,049.8	14.5	12.8	137.94	333.6	477.5	189.6	167.4	22.25	8.523		
4,200.0	4,128.5	4,199.6	4,148.1	14.9	13.2	137.82	343.6	491.5	194.5	171.7	22.86	8.508		
4,300.0	4,226.5	4,299.5	4,246.5	15.3	13.5	137.71	353.5	505.4	199.5	176.0	23.48	8.494		
4,400.0	4,324.4	4,399.4	4,344.9	15.7	13.9	137.60	363.5	519.4	204.4	180.3	24.10	8.480		
4,500.0	4,422.4	4,499.2	4,443.3	16.1	14.2	137.50	373.4	533.4	209.3	184.6	24.72	8.467		
4,600.0	4,520.3	4,599.1	4,541.7	16.5	14.6	137.40	383.4	547.4	214.3	188.9	25.34	8.455		
4,700.0	4,618.3	4,699.0	4,640.1	16.9	14.9	137.31	393.3	561.4	219.2	193.3	25.96	8.443		
4,800.0	4,716.2	4,798.9	4,738.5	17.3	15.3	137.22	403.2	575.4	224.2	197.6	26.58	8.432 SF		

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-6D (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			Distance				Total		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	36.08	12.0	8.7	14.9						
100.0	100.0	100.0	100.0	0.1	0.1	36.08	12.0	8.7	14.9	14.6	0.30	50.061			
200.0	200.0	200.0	200.0	0.3	0.3	36.08	12.0	8.7	14.9	14.2	0.65	23.001 CC			
300.0	300.0	299.6	299.6	0.5	0.5	-6.91	13.0	9.5	14.9	13.9	0.99	14.946			
400.0	399.9	399.2	399.1	0.7	0.7	-8.43	16.2	11.8	14.9	13.5	1.34	11.083			
500.0	499.7	498.8	498.5	0.9	0.9	-10.97	21.4	15.7	14.9	13.2	1.69	8.826			
600.0	599.3	598.4	597.7	1.1	1.1	-14.47	28.7	21.1	15.1	13.0	2.05	7.360			
700.0	698.6	698.0	696.6	1.4	1.4	-18.86	38.0	28.1	15.3	12.9	2.41	6.335 ES			
800.0	797.5	797.6	795.2	1.7	1.7	-24.01	49.4	36.6	15.7	12.9	2.82	5.574			
900.0	896.1	897.2	893.4	2.0	2.0	-29.69	62.9	46.6	16.3	13.1	3.29	4.972			
975.0	969.7	972.0	966.7	2.3	2.3	-34.15	74.4	55.2	17.0	13.3	3.70	4.589			
1,000.0	994.2	996.8	991.1	2.4	2.4	-35.49	78.4	58.2	17.3	13.5	3.85	4.496 SF			
1,100.0	1,092.1	1,096.4	1,088.2	2.7	2.8	-37.74	96.0	71.3	20.1	15.6	4.42	4.537			
1,200.0	1,190.1	1,196.0	1,184.8	3.1	3.2	-36.44	115.4	85.7	24.8	19.9	4.91	5.057			
1,300.0	1,288.0	1,295.9	1,281.6	3.5	3.7	-35.18	135.1	100.4	29.9	24.6	5.38	5.562			
1,400.0	1,386.0	1,395.7	1,378.4	3.9	4.1	-34.28	154.9	115.1	35.1	29.2	5.86	5.984			
1,500.0	1,483.9	1,495.6	1,475.2	4.3	4.6	-33.61	174.7	129.8	40.2	33.9	6.34	6.340			
1,600.0	1,581.9	1,595.5	1,572.0	4.7	5.0	-33.10	194.4	144.5	45.3	38.5	6.82	6.645			
1,700.0	1,679.8	1,695.3	1,668.7	5.1	5.5	-32.69	214.2	159.2	50.5	43.2	7.30	6.909			
1,800.0	1,777.8	1,795.2	1,765.5	5.5	6.0	-32.35	233.9	173.9	55.6	47.8	7.79	7.139			
1,900.0	1,875.7	1,895.1	1,862.3	5.8	6.4	-32.07	253.7	188.6	60.7	52.5	8.27	7.341			
2,000.0	1,973.7	1,994.9	1,959.1	6.2	6.9	-31.84	273.4	203.3	65.9	57.1	8.76	7.521			
2,100.0	2,071.6	2,094.8	2,055.9	6.6	7.3	-31.64	293.2	218.0	71.0	61.8	9.25	7.681			
2,200.0	2,169.6	2,194.7	2,152.6	7.0	7.8	-31.46	313.0	232.7	76.2	66.4	9.73	7.825			
2,300.0	2,267.5	2,294.5	2,249.4	7.4	8.3	-31.31	332.7	247.4	81.3	71.1	10.22	7.955			
2,400.0	2,365.5	2,394.4	2,346.2	7.8	8.7	-31.18	352.5	262.1	86.5	75.8	10.71	8.073			
2,500.0	2,463.4	2,494.3	2,443.0	8.2	9.2	-31.06	372.2	276.8	91.6	80.4	11.20	8.181			
2,600.0	2,561.4	2,594.1	2,539.8	8.6	9.7	-30.95	392.0	291.5	96.8	85.1	11.69	8.279			
2,700.0	2,659.3	2,694.0	2,636.6	9.0	10.1	-30.86	411.7	306.2	101.9	89.7	12.18	8.369			
2,800.0	2,757.3	2,793.9	2,733.3	9.4	10.6	-30.77	431.5	320.9	107.0	94.4	12.66	8.452			
2,900.0	2,855.2	2,893.7	2,830.1	9.8	11.1	-30.69	451.3	335.6	112.2	99.0	13.15	8.529			
3,000.0	2,953.2	2,993.6	2,926.9	10.2	11.5	-30.62	471.0	350.3	117.3	103.7	13.64	8.600			
3,100.0	3,051.1	3,093.5	3,023.7	10.6	12.0	-30.55	490.8	365.0	122.5	108.4	14.13	8.667			
3,200.0	3,149.0	3,193.3	3,120.5	11.0	12.5	-30.49	510.5	379.7	127.6	113.0	14.62	8.728			
3,300.0	3,247.0	3,293.2	3,217.3	11.4	12.9	-30.44	530.3	394.4	132.8	117.7	15.11	8.786			
3,400.0	3,344.9	3,393.1	3,314.0	11.7	13.4	-30.39	550.0	409.1	137.9	122.3	15.60	8.840			
3,500.0	3,442.9	3,493.0	3,410.8	12.1	13.9	-30.34	569.8	423.9	143.1	127.0	16.09	8.891			
3,600.0	3,540.8	3,592.8	3,507.6	12.5	14.3	-30.30	589.6	438.6	148.2	131.6	16.58	8.938			
3,700.0	3,638.8	3,692.7	3,604.4	12.9	14.8	-30.25	609.3	453.3	153.4	136.3	17.07	8.983			
3,800.0	3,736.7	3,792.6	3,701.2	13.3	15.3	-30.22	629.1	468.0	158.5	141.0	17.56	9.025			
3,900.0	3,834.7	3,892.4	3,798.0	13.7	15.7	-30.18	648.8	482.7	163.7	145.6	18.05	9.065			
4,000.0	3,932.6	3,992.3	3,894.7	14.1	16.2	-30.14	668.6	497.4	168.8	150.3	18.54	9.103			
4,100.0	4,030.6	4,092.2	3,991.5	14.5	16.7	-30.11	688.3	512.1	174.0	154.9	19.03	9.139			
4,200.0	4,128.5	4,192.0	4,088.3	14.9	17.1	-30.08	708.1	526.8	179.1	159.6	19.53	9.173			
4,300.0	4,226.5	4,291.9	4,185.1	15.3	17.6	-30.05	727.9	541.5	184.3	164.2	20.02	9.206			
4,400.0	4,324.4	4,391.8	4,281.9	15.7	18.1	-30.03	747.6	556.2	189.4	168.9	20.51	9.236			
4,500.0	4,422.4	4,491.6	4,378.7	16.1	18.5	-30.00	767.4	570.9	194.6	173.6	21.00	9.266			
4,600.0	4,520.3	4,591.5	4,475.4	16.5	19.0	-29.98	787.1	585.6	199.7	178.2	21.49	9.294			
4,700.0	4,618.3	4,691.4	4,572.2	16.9	19.5	-29.95	806.9	600.3	204.9	182.9	21.98	9.320			
4,800.0	4,716.2	4,791.2	4,669.0	17.3	19.9	-29.93	826.6	615.0	210.0	187.5	22.47	9.346			
4,900.0	4,814.2	4,891.1	4,765.8	17.7	20.4	-29.91	846.4	629.7	215.1	192.2	22.96	9.370			
5,000.0	4,912.1	4,991.0	4,862.6	18.1	20.9	-29.89	866.2	644.4	220.3	196.8	23.45	9.394			

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

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design 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		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	35.64	24.4	17.5	30.0					
100.0	100.0	100.0	100.0	0.1	0.1	35.64	24.4	17.5	30.0	29.7	101.202			
200.0	200.0	200.0	200.0	0.3	0.3	35.64	24.4	17.5	30.0	29.4	0.65	46.498		
300.0	300.0	299.2	299.2	0.5	0.5	-7.44	25.5	18.1	30.0	29.0	0.99	30.218		
380.0	379.9	378.6	378.5	0.6	0.6	-8.78	28.1	19.5	30.0	28.7	1.27	23.598 CC		
400.0	399.9	398.4	398.4	0.7	0.7	-9.23	28.9	20.0	30.0	28.7	1.34	22.380		
500.0	499.7	497.7	497.4	0.9	0.9	-12.22	34.6	23.0	30.1	28.4	1.69	17.796		
600.0	599.3	596.8	596.1	1.1	1.1	-16.36	42.5	27.3	30.3	28.2	2.04	14.826 ES		
700.0	698.6	696.0	694.6	1.4	1.4	-21.55	52.6	32.9	30.8	28.4	2.41	12.772		
800.0	797.5	795.2	792.8	1.7	1.7	-27.60	65.0	39.6	31.7	28.9	2.82	11.267		
900.0	896.1	894.3	890.5	2.0	2.0	-34.21	79.7	47.6	33.3	30.0	3.29	10.096		
975.0	969.7	968.6	963.4	2.3	2.3	-39.31	92.1	54.4	34.9	31.2	3.73	9.366		
1,000.0	994.2	993.4	987.7	2.4	2.4	-40.92	96.5	56.8	35.6	31.7	3.88	9.172		
1,100.0	1,092.1	1,092.4	1,084.3	2.7	2.8	-45.50	115.5	67.1	40.0	35.5	4.53	8.849 SF		
1,200.0	1,190.1	1,191.2	1,180.1	3.1	3.2	-47.31	136.7	78.7	46.8	41.7	5.16	9.078		
1,300.0	1,288.0	1,289.7	1,275.0	3.5	3.7	-47.16	160.0	91.3	55.8	50.0	5.75	9.696		
1,400.0	1,386.0	1,388.2	1,369.2	3.9	4.2	-45.90	185.3	105.1	66.7	60.4	6.29	10.603		
1,500.0	1,483.9	1,487.5	1,464.0	4.3	4.7	-44.75	211.3	119.3	78.2	71.4	6.83	11.454		
1,600.0	1,581.9	1,586.8	1,558.8	4.7	5.3	-43.91	237.3	133.4	89.8	82.4	7.37	12.179		
1,700.0	1,679.8	1,686.2	1,653.6	5.1	5.8	-43.25	263.3	147.6	101.3	93.4	7.92	12.801		
1,800.0	1,777.8	1,785.5	1,748.4	5.5	6.4	-42.73	289.3	161.8	112.9	104.4	8.46	13.340		
1,900.0	1,875.7	1,884.8	1,843.2	5.8	6.9	-42.30	315.3	175.9	124.4	115.4	9.01	13.813		
2,000.0	1,973.7	1,984.1	1,938.0	6.2	7.4	-41.95	341.4	190.1	136.0	126.5	9.56	14.230		
2,100.0	2,071.6	2,083.5	2,032.8	6.6	8.0	-41.65	367.4	204.3	147.6	137.5	10.11	14.600		
2,200.0	2,169.6	2,182.8	2,127.6	7.0	8.5	-41.40	393.4	218.4	159.2	148.5	10.66	14.931		
2,300.0	2,267.5	2,282.1	2,222.4	7.4	9.1	-41.18	419.4	232.6	170.7	159.5	11.21	15.228		
2,400.0	2,365.5	2,381.4	2,317.2	7.8	9.6	-40.99	445.4	246.8	182.3	170.6	11.76	15.497		
2,500.0	2,463.4	2,480.8	2,412.0	8.2	10.2	-40.82	471.4	260.9	193.9	181.6	12.32	15.742		
2,600.0	2,561.4	2,580.1	2,506.8	8.6	10.7	-40.67	497.4	275.1	205.5	192.6	12.87	15.964		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design 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	36.35	36.4	26.8	45.2					
100.0	100.0	100.0	100.0	0.1	0.1	36.35	36.4	26.8	45.2	44.9	0.30	152.424		
200.0	200.0	200.0	200.0	0.3	0.3	36.35	36.4	26.8	45.2	44.6	0.65	70.033		
300.0	300.0	298.9	298.9	0.5	0.5	-6.73	37.6	27.3	45.2	44.2	0.99	45.498		
400.0	399.9	397.7	397.6	0.7	0.7	-8.56	41.2	28.6	45.0	43.7	1.34	33.613		
500.0	499.7	496.6	496.3	0.9	0.9	-11.63	47.2	30.9	44.9	43.3	1.69	26.620		
522.8	522.4	519.1	518.7	0.9	0.9	-12.50	48.9	31.6	44.9	43.2	1.77	25.405 CC		
600.0	599.3	595.3	594.6	1.1	1.1	-15.92	55.5	34.1	45.0	43.0	2.04	22.073 ES		
700.0	698.6	694.1	692.7	1.4	1.4	-21.36	66.2	38.2	45.5	43.1	2.40	18.936		
800.0	797.5	792.8	790.4	1.7	1.7	-27.77	79.3	43.2	46.6	43.8	2.80	16.662		
900.0	896.1	891.3	887.6	2.0	2.0	-34.84	94.7	49.1	48.7	45.4	3.26	14.922		
975.0	969.7	965.3	960.2	2.3	2.2	-40.32	107.8	54.0	50.9	47.3	3.68	13.851		
1,000.0	994.2	989.8	984.2	2.4	2.3	-42.10	112.4	55.8	51.9	48.1	3.83	13.557		
1,100.0	1,092.1	1,088.2	1,080.3	2.7	2.7	-47.81	132.5	63.5	57.7	53.2	4.47	12.900		
1,200.0	1,190.1	1,186.4	1,175.5	3.1	3.2	-51.31	154.8	72.0	66.2	61.1	5.14	12.870 SF		
1,300.0	1,288.0	1,284.2	1,269.7	3.5	3.7	-52.98	179.2	81.3	77.0	71.2	5.81	13.264		
1,400.0	1,386.0	1,381.6	1,362.8	3.9	4.2	-53.36	205.8	91.5	90.0	83.6	6.45	13.959		
1,500.0	1,483.9	1,478.3	1,454.6	4.3	4.7	-52.91	234.4	102.4	105.2	98.1	7.07	14.884		
1,600.0	1,581.9	1,575.5	1,546.1	4.7	5.3	-52.01	265.1	114.1	122.3	114.6	7.65	15.974		
1,700.0	1,679.8	1,674.0	1,638.6	5.1	5.9	-51.24	296.6	126.1	139.7	131.5	8.24	16.949		
1,800.0	1,777.8	1,772.4	1,731.1	5.5	6.5	-50.64	328.0	138.1	157.2	148.3	8.84	17.790		
1,900.0	1,875.7	1,870.9	1,823.6	5.8	7.1	-50.16	359.5	150.1	174.7	165.2	9.43	18.522		
2,000.0	1,973.7	1,969.3	1,916.1	6.2	7.7	-49.77	390.9	162.1	192.2	182.1	10.03	19.163		
2,100.0	2,071.6	2,067.8	2,008.6	6.6	8.3	-49.45	422.4	174.1	209.6	199.0	10.63	19.731		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S22-T6S-R97W - OXY 22-9D (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	-134.82	-42.6	-42.9	60.5					
100.0	100.0	100.0	100.0	0.1	0.1	-134.82	-42.6	-42.9	60.5	60.2	0.30	203.780		
200.0	200.0	200.0	200.0	0.3	0.3	-134.82	-42.6	-42.9	60.5	59.8	0.65	93.629 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-177.35	-42.6	-42.9	61.8	60.8	0.99	62.104		
400.0	399.9	399.9	399.9	0.7	0.7	-177.51	-42.6	-42.9	65.7	64.3	1.34	48.922		
500.0	499.7	497.9	497.9	0.9	0.8	-177.47	-43.3	-44.0	73.5	71.8	1.69	43.551		
600.0	599.3	595.1	595.0	1.1	1.0	-177.09	-45.1	-47.2	86.3	84.3	2.03	42.538 SF		
700.0	698.6	691.2	690.9	1.4	1.2	-176.55	-48.2	-52.5	104.1	101.8	2.37	43.986		
800.0	797.5	786.9	786.2	1.7	1.4	-176.00	-52.4	-59.6	126.8	124.0	2.70	46.873		
900.0	896.1	883.5	882.5	2.0	1.6	-175.63	-56.9	-67.3	152.4	149.3	3.04	50.105		
975.0	969.7	955.6	954.3	2.3	1.8	-175.46	-60.2	-73.0	173.2	169.9	3.29	52.633		
1,000.0	994.2	979.5	978.1	2.4	1.8	-175.43	-61.3	-74.8	180.4	177.0	3.38	53.426		

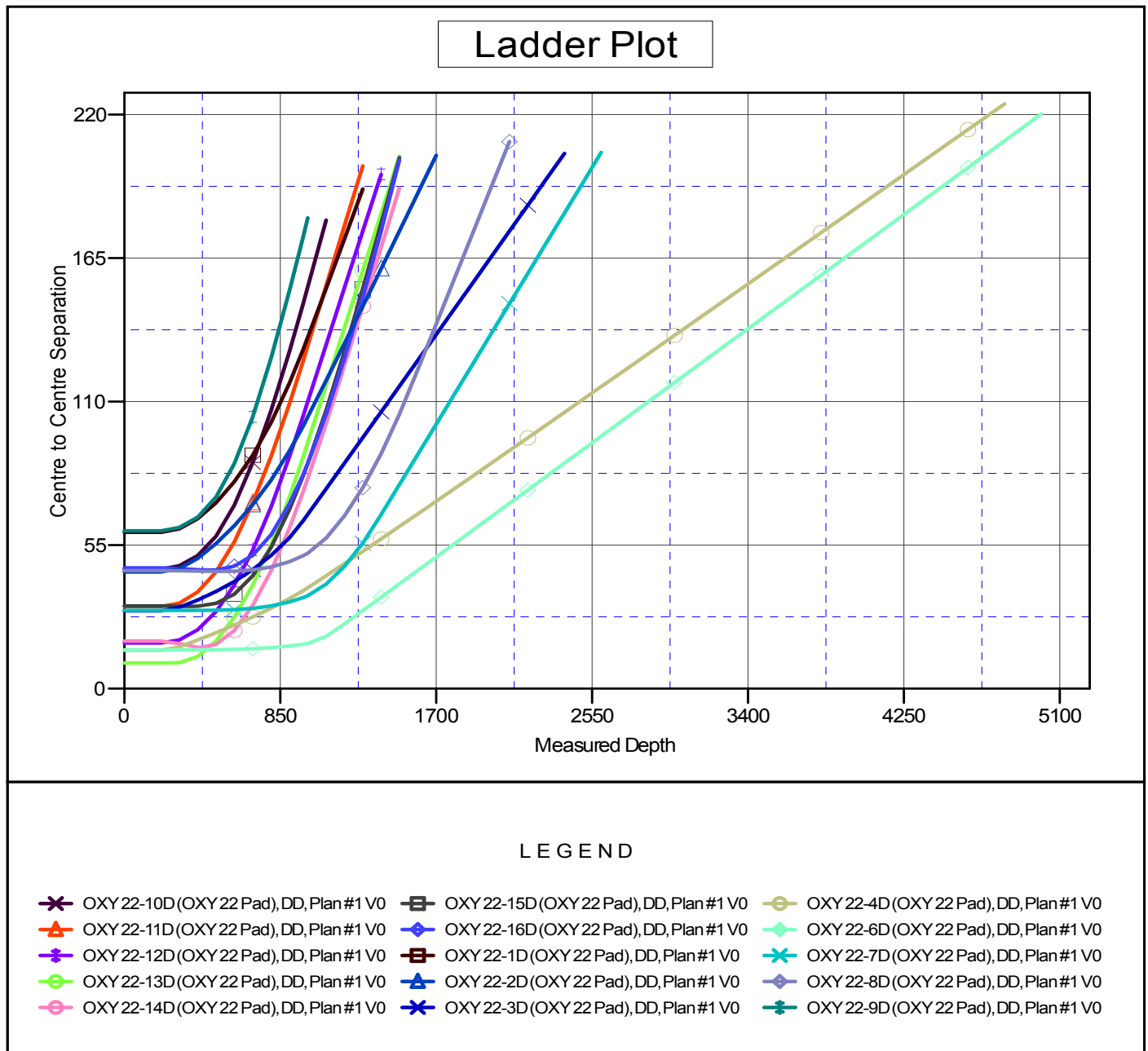
Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-5D (OXY 22 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8506.0ft (Original Well Elev)
Reference Site:	SWSE S22-T6S-R97W	MD Reference:	KBE @ 8506.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	OXY 22-5D (OXY 22 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	US EDM 2003.21 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	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 22-5D (OXY 22 Pad)
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.70°



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