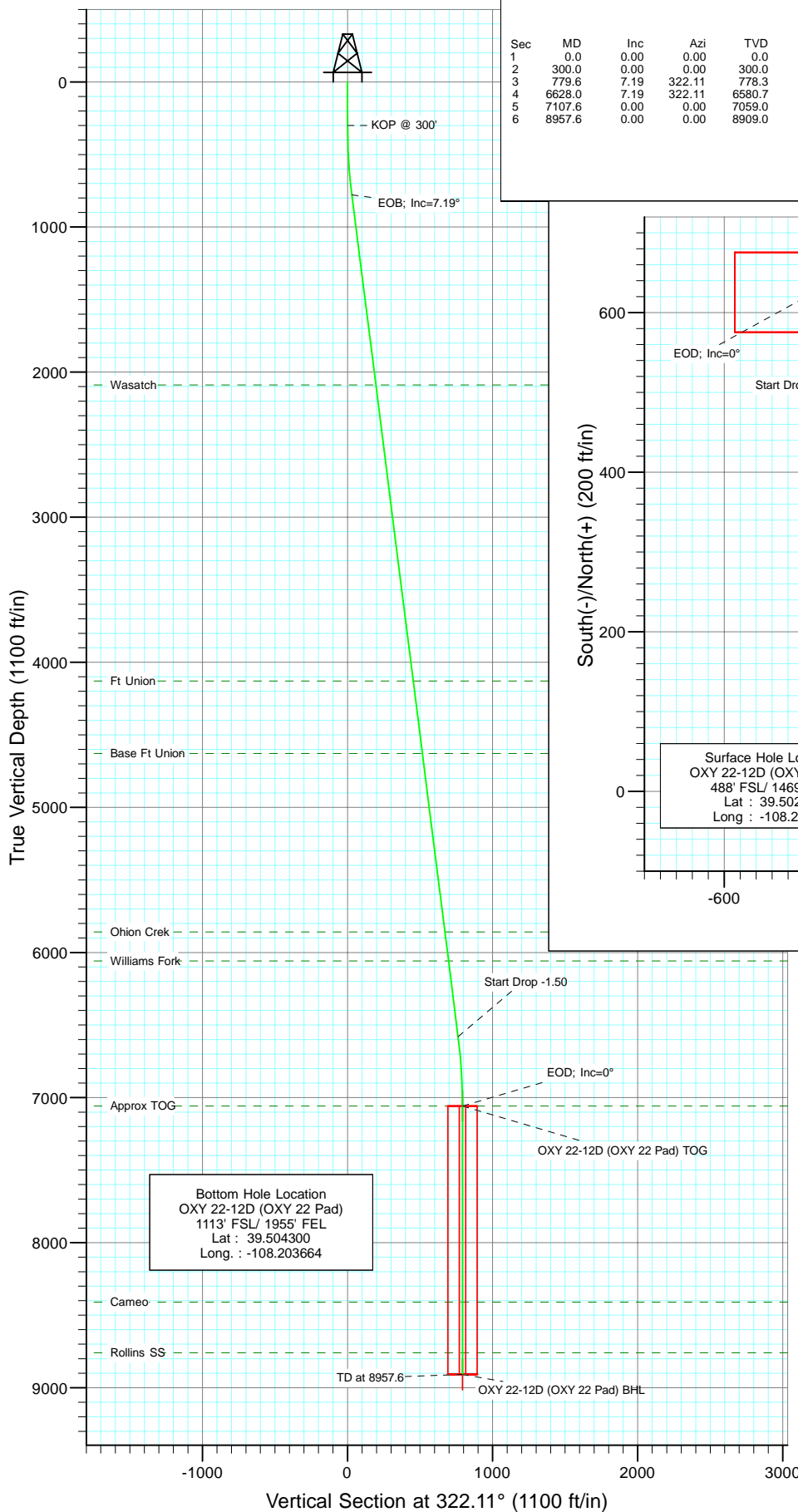




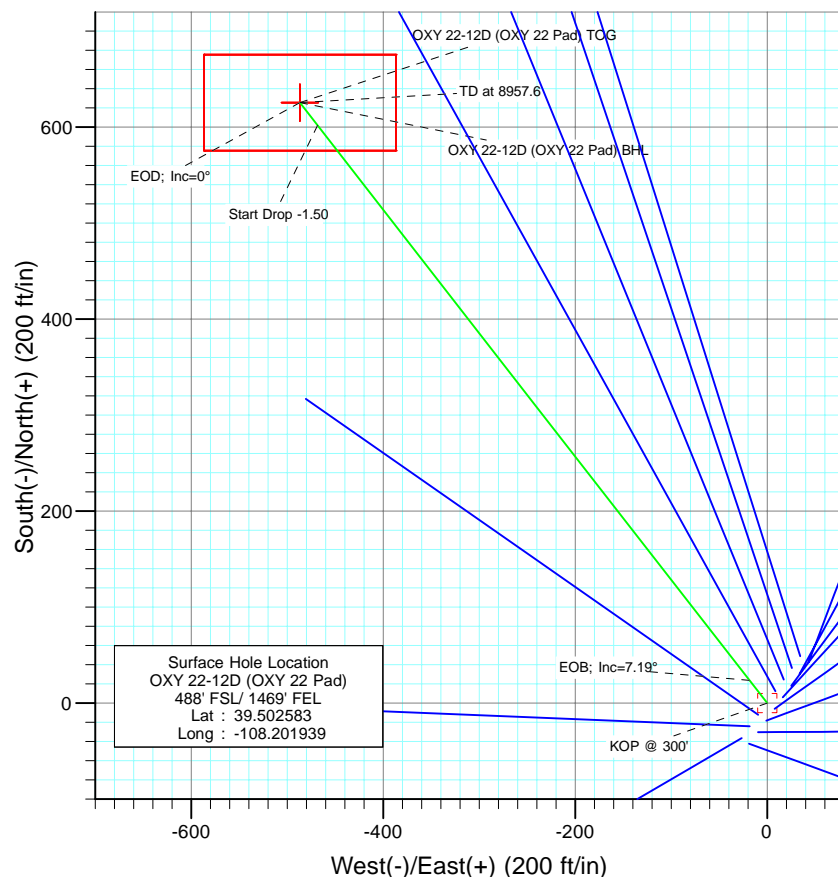
Berry Petroleum Company

Project: Garfield County
Site: SWSE S22-T6S-R97W
Well: OXY 22-12D (OXY 22 Pad)
Wellbore: DD
Design: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	779.6	7.19	322.11	778.3	23.7	-18.5	1.50	322.11	30.1	
4	6628.0	7.19	322.11	6580.7	601.7	-468.3	0.00	0.00	762.4	
5	7107.6	0.00	0.00	7059.0	625.4	-486.7	1.50	180.00	792.5	OXY 22-12D (OXY 22 Pad) TOG
6	8957.6	0.00	0.00	8909.0	625.4	-486.7	0.00	0.00	792.5	OXY 22-12D (OXY 22 Pad) BHL



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2089.0	2100.7	Wasatch
4129.0	4156.8	Ft Union
4629.0	4660.8	Base Ft Union
5859.0	5900.6	Ohion Creek
6059.0	6102.2	Williams Fork
7059.0	7107.6	Approx TOG
8409.0	8457.6	Cameo
8759.0	8807.6	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 22-12D (OXY 22 Pad) BHL	322.11	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 22-12D (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 22-12D (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 22-12D (OXY 22 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,619,284.89 ft	Latitude:	39.502583
	+E/-W	0.0 ft	Easting:	2,237,699.73 ft	Longitude:	-108.201939
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	322.11

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
779.6	7.19	322.11	778.3	23.7	-18.5	1.50	1.50	0.00	322.11	
6,628.0	7.19	322.11	6,580.7	601.7	-468.3	0.00	0.00	0.00	0.00	
7,107.6	0.00	0.00	7,059.0	625.4	-486.7	1.50	-1.50	0.00	180.00	OXY 22-12D (OXY 22
8,957.6	0.00	0.00	8,909.0	625.4	-486.7	0.00	0.00	0.00	0.00	OXY 22-12D (OXY 22

Cathedral Energy Services

Planning Report

Database:	US EDM 2003.21 Multi Users DB	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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	
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	322.11	330.0	0.1	-0.1	0.1	1.50	1.50	
360.0	0.90	322.11	360.0	0.4	-0.3	0.5	1.50	1.50	
390.0	1.35	322.11	390.0	0.8	-0.7	1.1	1.50	1.50	
420.0	1.80	322.11	420.0	1.5	-1.2	1.9	1.50	1.50	
450.0	2.25	322.11	450.0	2.3	-1.8	2.9	1.50	1.50	
480.0	2.70	322.11	479.9	3.3	-2.6	4.2	1.50	1.50	
510.0	3.15	322.11	509.9	4.6	-3.5	5.8	1.50	1.50	
540.0	3.60	322.11	539.8	5.9	-4.6	7.5	1.50	1.50	
570.0	4.05	322.11	569.8	7.5	-5.9	9.5	1.50	1.50	
600.0	4.50	322.11	599.7	9.3	-7.2	11.8	1.50	1.50	
630.0	4.95	322.11	629.6	11.2	-8.7	14.2	1.50	1.50	
660.0	5.40	322.11	659.5	13.4	-10.4	17.0	1.50	1.50	
690.0	5.85	322.11	689.3	15.7	-12.2	19.9	1.50	1.50	
720.0	6.30	322.11	719.2	18.2	-14.2	23.1	1.50	1.50	
750.0	6.75	322.11	749.0	20.9	-16.3	26.5	1.50	1.50	
779.6	7.19	322.11	778.3	23.7	-18.5	30.1	1.50	1.50	EOB; Inc=7.19°
780.0	7.19	322.11	778.7	23.8	-18.5	30.1	0.00	0.00	
810.0	7.19	322.11	808.5	26.7	-20.8	33.9	0.00	0.00	
840.0	7.19	322.11	838.3	29.7	-23.1	37.6	0.00	0.00	
870.0	7.19	322.11	868.0	32.7	-25.4	41.4	0.00	0.00	
900.0	7.19	322.11	897.8	35.6	-27.7	45.1	0.00	0.00	
930.0	7.19	322.11	927.6	38.6	-30.0	48.9	0.00	0.00	
960.0	7.19	322.11	957.3	41.6	-32.3	52.7	0.00	0.00	
990.0	7.19	322.11	987.1	44.5	-34.7	56.4	0.00	0.00	
1,020.0	7.19	322.11	1,016.8	47.5	-37.0	60.2	0.00	0.00	
1,050.0	7.19	322.11	1,046.6	50.5	-39.3	63.9	0.00	0.00	
1,080.0	7.19	322.11	1,076.4	53.4	-41.6	67.7	0.00	0.00	
1,110.0	7.19	322.11	1,106.1	56.4	-43.9	71.4	0.00	0.00	
1,140.0	7.19	322.11	1,135.9	59.3	-46.2	75.2	0.00	0.00	
1,170.0	7.19	322.11	1,165.7	62.3	-48.5	79.0	0.00	0.00	
1,200.0	7.19	322.11	1,195.4	65.3	-50.8	82.7	0.00	0.00	
1,230.0	7.19	322.11	1,225.2	68.2	-53.1	86.5	0.00	0.00	
1,260.0	7.19	322.11	1,255.0	71.2	-55.4	90.2	0.00	0.00	
1,290.0	7.19	322.11	1,284.7	74.2	-57.7	94.0	0.00	0.00	
1,320.0	7.19	322.11	1,314.5	77.1	-60.0	97.7	0.00	0.00	
1,350.0	7.19	322.11	1,344.3	80.1	-62.3	101.5	0.00	0.00	
1,380.0	7.19	322.11	1,374.0	83.1	-64.6	105.3	0.00	0.00	
1,410.0	7.19	322.11	1,403.8	86.0	-67.0	109.0	0.00	0.00	
1,440.0	7.19	322.11	1,433.5	89.0	-69.3	112.8	0.00	0.00	
1,470.0	7.19	322.11	1,463.3	92.0	-71.6	116.5	0.00	0.00	
1,500.0	7.19	322.11	1,493.1	94.9	-73.9	120.3	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	US EDM 2003.21 Multi Users DB	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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
1,530.0	7.19	322.11	1,522.8	97.9	-76.2	124.0	0.00	0.00	
1,560.0	7.19	322.11	1,552.6	100.9	-78.5	127.8	0.00	0.00	
1,590.0	7.19	322.11	1,582.4	103.8	-80.8	131.6	0.00	0.00	
1,620.0	7.19	322.11	1,612.1	106.8	-83.1	135.3	0.00	0.00	
1,650.0	7.19	322.11	1,641.9	109.7	-85.4	139.1	0.00	0.00	
1,680.0	7.19	322.11	1,671.7	112.7	-87.7	142.8	0.00	0.00	
1,710.0	7.19	322.11	1,701.4	115.7	-90.0	146.6	0.00	0.00	
1,740.0	7.19	322.11	1,731.2	118.6	-92.3	150.3	0.00	0.00	
1,770.0	7.19	322.11	1,760.9	121.6	-94.6	154.1	0.00	0.00	
1,800.0	7.19	322.11	1,790.7	124.6	-96.9	157.8	0.00	0.00	
1,830.0	7.19	322.11	1,820.5	127.5	-99.3	161.6	0.00	0.00	
1,860.0	7.19	322.11	1,850.2	130.5	-101.6	165.4	0.00	0.00	
1,890.0	7.19	322.11	1,880.0	133.5	-103.9	169.1	0.00	0.00	
1,920.0	7.19	322.11	1,909.8	136.4	-106.2	172.9	0.00	0.00	
1,950.0	7.19	322.11	1,939.5	139.4	-108.5	176.6	0.00	0.00	
1,980.0	7.19	322.11	1,969.3	142.4	-110.8	180.4	0.00	0.00	
2,010.0	7.19	322.11	1,999.1	145.3	-113.1	184.1	0.00	0.00	
2,040.0	7.19	322.11	2,028.8	148.3	-115.4	187.9	0.00	0.00	
2,070.0	7.19	322.11	2,058.6	151.3	-117.7	191.7	0.00	0.00	
2,100.0	7.19	322.11	2,088.3	154.2	-120.0	195.4	0.00	0.00	
2,100.7	7.19	322.11	2,089.0	154.3	-120.1	195.5	0.00	0.00	Wasatch
2,130.0	7.19	322.11	2,118.1	157.2	-122.3	199.2	0.00	0.00	
2,160.0	7.19	322.11	2,147.9	160.1	-124.6	202.9	0.00	0.00	
2,190.0	7.19	322.11	2,177.6	163.1	-126.9	206.7	0.00	0.00	
2,220.0	7.19	322.11	2,207.4	166.1	-129.3	210.4	0.00	0.00	
2,250.0	7.19	322.11	2,237.2	169.0	-131.6	214.2	0.00	0.00	
2,280.0	7.19	322.11	2,266.9	172.0	-133.9	218.0	0.00	0.00	
2,310.0	7.19	322.11	2,296.7	175.0	-136.2	221.7	0.00	0.00	
2,340.0	7.19	322.11	2,326.5	177.9	-138.5	225.5	0.00	0.00	
2,370.0	7.19	322.11	2,356.2	180.9	-140.8	229.2	0.00	0.00	
2,400.0	7.19	322.11	2,386.0	183.9	-143.1	233.0	0.00	0.00	
2,430.0	7.19	322.11	2,415.7	186.8	-145.4	236.7	0.00	0.00	
2,460.0	7.19	322.11	2,445.5	189.8	-147.7	240.5	0.00	0.00	
2,490.0	7.19	322.11	2,475.3	192.8	-150.0	244.3	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 22-12D (OXY 22 P	0.00	0.00	8,909.0	625.4	-486.7	1,619,924.50	2,237,231.80	39.504300	-108.203664
- plan misses target center by 6457.0ft at 2490.0ft MD (2475.3 TVD, 192.8 N, -150.0 E)									
- Rectangle (sides W200.0 H100.0 D0.0)									
OXY 22-12D (OXY 22 P	0.00	0.00	7,059.0	625.4	-486.7	1,619,924.50	2,237,231.80	39.504300	-108.203664
- plan misses target center by 4616.4ft at 2490.0ft MD (2475.3 TVD, 192.8 N, -150.0 E)									
- Point									

Cathedral Energy Services

Planning Report

Database:	US EDM 2003.21 Multi Users DB	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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	7.19	322.11	2,485.2	193.7	-150.8	245.5	0.00	0.00	
2,600.0	7.19	322.11	2,584.4	203.6	-158.5	258.0	0.00	0.00	
2,700.0	7.19	322.11	2,683.6	213.5	-166.2	270.6	0.00	0.00	
2,800.0	7.19	322.11	2,782.8	223.4	-173.9	283.1	0.00	0.00	
2,900.0	7.19	322.11	2,882.0	233.3	-181.6	295.6	0.00	0.00	
3,000.0	7.19	322.11	2,981.3	243.2	-189.2	308.1	0.00	0.00	
3,100.0	7.19	322.11	3,080.5	253.0	-196.9	320.6	0.00	0.00	
3,200.0	7.19	322.11	3,179.7	262.9	-204.6	333.2	0.00	0.00	
3,300.0	7.19	322.11	3,278.9	272.8	-212.3	345.7	0.00	0.00	
3,400.0	7.19	322.11	3,378.1	282.7	-220.0	358.2	0.00	0.00	
3,500.0	7.19	322.11	3,477.3	292.6	-227.7	370.7	0.00	0.00	
3,600.0	7.19	322.11	3,576.5	302.5	-235.4	383.3	0.00	0.00	
3,700.0	7.19	322.11	3,675.8	312.3	-243.1	395.8	0.00	0.00	
3,800.0	7.19	322.11	3,775.0	322.2	-250.8	408.3	0.00	0.00	
3,900.0	7.19	322.11	3,874.2	332.1	-258.5	420.8	0.00	0.00	
4,000.0	7.19	322.11	3,973.4	342.0	-266.2	433.3	0.00	0.00	
4,100.0	7.19	322.11	4,072.6	351.9	-273.8	445.9	0.00	0.00	
4,156.8	7.19	322.11	4,129.0	357.5	-278.2	453.0	0.00	0.00	Ft Union
4,200.0	7.19	322.11	4,171.8	361.7	-281.5	458.4	0.00	0.00	
4,300.0	7.19	322.11	4,271.0	371.6	-289.2	470.9	0.00	0.00	
4,400.0	7.19	322.11	4,370.2	381.5	-296.9	483.4	0.00	0.00	
4,500.0	7.19	322.11	4,469.5	391.4	-304.6	496.0	0.00	0.00	
4,600.0	7.19	322.11	4,568.7	401.3	-312.3	508.5	0.00	0.00	
4,660.8	7.19	322.11	4,629.0	407.3	-317.0	516.1	0.00	0.00	Base Ft Union
4,700.0	7.19	322.11	4,667.9	411.2	-320.0	521.0	0.00	0.00	
4,800.0	7.19	322.11	4,767.1	421.0	-327.7	533.5	0.00	0.00	
4,900.0	7.19	322.11	4,866.3	430.9	-335.4	546.0	0.00	0.00	
5,000.0	7.19	322.11	4,965.5	440.8	-343.1	558.6	0.00	0.00	
5,100.0	7.19	322.11	5,064.7	450.7	-350.8	571.1	0.00	0.00	
5,200.0	7.19	322.11	5,163.9	460.6	-358.4	583.6	0.00	0.00	
5,300.0	7.19	322.11	5,263.2	470.5	-366.1	596.1	0.00	0.00	
5,400.0	7.19	322.11	5,362.4	480.3	-373.8	608.7	0.00	0.00	
5,500.0	7.19	322.11	5,461.6	490.2	-381.5	621.2	0.00	0.00	
5,600.0	7.19	322.11	5,560.8	500.1	-389.2	633.7	0.00	0.00	
5,700.0	7.19	322.11	5,660.0	510.0	-396.9	646.2	0.00	0.00	
5,800.0	7.19	322.11	5,759.2	519.9	-404.6	658.8	0.00	0.00	
5,900.0	7.19	322.11	5,858.4	529.7	-412.3	671.3	0.00	0.00	
5,900.6	7.19	322.11	5,859.0	529.8	-412.3	671.3	0.00	0.00	Ohion Creek
6,000.0	7.19	322.11	5,957.6	539.6	-420.0	683.8	0.00	0.00	
6,100.0	7.19	322.11	6,056.9	549.5	-427.7	696.3	0.00	0.00	
6,102.2	7.19	322.11	6,059.0	549.7	-427.8	696.6	0.00	0.00	Williams Fork
6,200.0	7.19	322.11	6,156.1	559.4	-435.4	708.8	0.00	0.00	
6,300.0	7.19	322.11	6,255.3	569.3	-443.0	721.4	0.00	0.00	
6,400.0	7.19	322.11	6,354.5	579.2	-450.7	733.9	0.00	0.00	
6,500.0	7.19	322.11	6,453.7	589.0	-458.4	746.4	0.00	0.00	
6,600.0	7.19	322.11	6,552.9	598.9	-466.1	758.9	0.00	0.00	
6,628.0	7.19	322.11	6,580.7	601.7	-468.3	762.4	0.00	0.00	Start Drop -1.50
6,700.0	6.11	322.11	6,652.2	608.3	-473.4	770.8	1.50	-1.50	
6,800.0	4.61	322.11	6,751.8	615.6	-479.1	780.1	1.50	-1.50	
6,900.0	3.11	322.11	6,851.5	621.0	-483.3	786.9	1.50	-1.50	
7,000.0	1.61	322.11	6,951.5	624.2	-485.8	791.0	1.50	-1.50	
7,100.0	0.11	322.11	7,051.4	625.4	-486.7	792.5	1.50	-1.50	

Cathedral Energy Services

Planning Report

Database:	US EDM 2003.21 Multi Users DB	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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
7,107.6	0.00	0.00	7,059.0	625.4	-486.7	792.5	1.50	-1.50	EOD; Inc=0° - Approx TOG - OXY 22-12D (OXY 22 Pad) BHL
7,200.0	0.00	0.00	7,151.4	625.4	-486.7	792.5	0.00	0.00	
7,300.0	0.00	0.00	7,251.4	625.4	-486.7	792.5	0.00	0.00	
7,400.0	0.00	0.00	7,351.4	625.4	-486.7	792.5	0.00	0.00	
7,500.0	0.00	0.00	7,451.4	625.4	-486.7	792.5	0.00	0.00	
7,600.0	0.00	0.00	7,551.4	625.4	-486.7	792.5	0.00	0.00	
7,700.0	0.00	0.00	7,651.4	625.4	-486.7	792.5	0.00	0.00	
7,800.0	0.00	0.00	7,751.4	625.4	-486.7	792.5	0.00	0.00	
7,900.0	0.00	0.00	7,851.4	625.4	-486.7	792.5	0.00	0.00	
8,000.0	0.00	0.00	7,951.4	625.4	-486.7	792.5	0.00	0.00	
8,100.0	0.00	0.00	8,051.4	625.4	-486.7	792.5	0.00	0.00	
8,200.0	0.00	0.00	8,151.4	625.4	-486.7	792.5	0.00	0.00	
8,300.0	0.00	0.00	8,251.4	625.4	-486.7	792.5	0.00	0.00	
8,400.0	0.00	0.00	8,351.4	625.4	-486.7	792.5	0.00	0.00	
8,457.6	0.00	0.00	8,409.0	625.4	-486.7	792.5	0.00	0.00	Cameo
8,500.0	0.00	0.00	8,451.4	625.4	-486.7	792.5	0.00	0.00	
8,600.0	0.00	0.00	8,551.4	625.4	-486.7	792.5	0.00	0.00	
8,700.0	0.00	0.00	8,651.4	625.4	-486.7	792.5	0.00	0.00	
8,800.0	0.00	0.00	8,751.4	625.4	-486.7	792.5	0.00	0.00	
8,807.6	0.00	0.00	8,759.0	625.4	-486.7	792.5	0.00	0.00	Rollins SS
8,900.0	0.00	0.00	8,851.4	625.4	-486.7	792.5	0.00	0.00	
8,957.6	0.00	0.00	8,909.0	625.4	-486.7	792.5	0.00	0.00	TD at 8957.6 - OXY 22-12D (OXY 22 Pad) BHL

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
OXY 22-12D (OXY 22 P - plan hits target center - Rectangle (sides W100.0 H200.0 D0.0)	0.00	0.00	8,909.0	625.4	-486.7	1,619,924.50	2,237,231.80	39.504300	-108.203664
OXY 22-12D (OXY 22 P - plan hits target center - Point	0.00	0.00	7,059.0	625.4	-486.7	1,619,924.50	2,237,231.80	39.504300	-108.203664

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,100.7	2,089.0	Wasatch		0.00	
4,156.8	4,129.0	Ft Union		0.00	
4,660.8	4,629.0	Base Ft Union		0.00	
5,900.6	5,859.0	Ohion Creek		0.00	
6,102.2	6,059.0	Williams Fork		0.00	
7,107.6	7,059.0	Approx TOG		0.00	
8,457.6	8,409.0	Cameo		0.00	
8,807.6	8,759.0	Rollins SS		0.00	

Cathedral Energy Services

Planning Report

Database:	US EDM 2003.21 Multi Users DB	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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)	
300.0	300.0	0.0	0.0	KOP @ 300'
779.6	778.3	23.7	-18.5	EOB; Inc=7.19°
6,628.0	6,580.7	601.7	-468.3	Start Drop -1.50
7,107.6	7,059.0	625.4	-486.7	EOD; Inc=0°
8,957.6	8,909.0	625.4	-486.7	TD at 8957.6

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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	8,957.6	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	30.1	29.1	30.223	CC, ES
OXY 22-10D (OXY 22 Pad) - DD - Plan #1	700.0	698.4	43.5	41.0	17.554	SF
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	15.2	14.2	15.284	CC, ES
OXY 22-11D (OXY 22 Pad) - DD - Plan #1	779.6	779.4	24.1	21.2	8.282	SF
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	15.2	14.2	15.241	CC
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	400.0	399.8	15.4	14.0	11.402	ES
OXY 22-13D (OXY 22 Pad) - DD - Plan #1	900.0	898.8	22.5	18.9	6.344	SF
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	29.9	28.9	30.019	CC
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	400.0	399.6	30.2	28.8	22.431	ES
OXY 22-14D (OXY 22 Pad) - DD - Plan #1	1,000.0	996.5	47.4	43.4	11.695	SF
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	44.7	44.1	69.264	CC, ES
OXY 22-15D (OXY 22 Pad) - DD - Plan #1	1,000.0	991.4	77.8	73.7	19.235	SF
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	59.7	59.1	92.490	CC, ES
OXY 22-16D (OXY 22 Pad) - DD - Plan #1	1,100.0	1,086.9	104.0	99.4	22.757	SF
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	46.3	45.3	46.533	CC, ES
OXY 22-1D (OXY 22 Pad) - DD - Plan #1	700.0	697.5	63.0	60.5	25.863	SF
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	31.7	30.7	31.887	CC, ES
OXY 22-2D (OXY 22 Pad) - DD - Plan #1	600.0	599.6	39.6	37.5	19.229	SF
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	18.2	17.2	18.326	CC, ES
OXY 22-3D (OXY 22 Pad) - DD - Plan #1	500.0	500.0	21.8	20.1	12.788	SF
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	9.8	8.8	9.869	CC, ES
OXY 22-4D (OXY 22 Pad) - DD - Plan #1	400.0	399.9	11.5	10.2	8.565	SF
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	17.5	16.9	27.097	CC, ES
OXY 22-5D (OXY 22 Pad) - DD - Plan #1	400.0	399.0	22.6	21.2	16.764	SF
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	31.0	30.4	48.025	CC, ES
OXY 22-6D (OXY 22 Pad) - DD - Plan #1	600.0	595.5	51.5	49.4	24.692	SF
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	45.6	45.0	70.670	CC, ES
OXY 22-7D (OXY 22 Pad) - DD - Plan #1	779.6	769.4	85.6	82.8	29.952	SF
OXY 22-8D (OXY 22 Pad) - DD - Plan #1	200.0	200.0	60.7	60.0	93.939	CC, ES
OXY 22-8D (OXY 22 Pad) - DD - Plan #1	1,000.0	980.7	130.4	126.5	33.021	SF
OXY 22-9D (OXY 22 Pad) - DD - Plan #1	300.0	300.0	45.1	44.1	45.292	CC, ES
OXY 22-9D (OXY 22 Pad) - DD - Plan #1	700.0	695.7	63.4	60.9	25.800	SF

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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							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	-143.09	-24.0	-18.1	30.1					
100.0	100.0	100.0	100.0	0.1	0.1	-143.09	-24.0	-18.1	30.1	29.8	0.30	101.337		
200.0	200.0	200.0	200.0	0.3	0.3	-143.09	-24.0	-18.1	30.1	29.4	0.65	46.560		
300.0	300.0	300.0	300.0	0.5	0.5	-143.09	-24.0	-18.1	30.1	29.1	0.99	30.223 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-107.57	-24.0	-18.1	30.4	29.1	1.35	22.625		
500.0	499.9	499.5	499.5	0.9	0.8	-112.19	-24.0	-19.4	32.4	30.7	1.70	19.046		
600.0	599.7	599.0	598.9	1.1	1.0	-116.16	-23.8	-23.2	36.8	34.7	2.08	17.720		
700.0	699.3	698.4	698.1	1.3	1.2	-119.04	-23.6	-29.7	43.5	41.0	2.48	17.554 SF		
779.6	778.3	777.7	777.2	1.5	1.4	-121.60	-23.3	-35.7	50.1	47.3	2.81	17.819		
800.0	798.6	798.0	797.4	1.5	1.4	-122.37	-23.3	-37.3	52.0	49.1	2.90	17.919		
900.0	897.8	897.5	896.7	1.8	1.6	-125.47	-23.0	-44.9	61.1	57.7	3.33	18.341		
1,000.0	997.0	997.1	995.9	2.0	1.8	-127.75	-22.6	-52.5	70.3	66.5	3.76	18.684		
1,100.0	1,096.2	1,096.6	1,095.2	2.3	2.1	-129.51	-22.3	-60.1	79.6	75.4	4.19	18.968		
1,200.0	1,195.4	1,196.2	1,194.4	2.6	2.3	-130.90	-22.0	-67.7	88.9	84.3	4.63	19.207		
1,300.0	1,294.6	1,295.7	1,293.7	2.9	2.5	-132.02	-21.7	-75.2	98.3	93.3	5.07	19.410		
1,400.0	1,393.9	1,395.2	1,392.9	3.1	2.7	-132.95	-21.4	-82.8	107.8	102.3	5.50	19.585		
1,500.0	1,493.1	1,494.8	1,492.2	3.4	2.9	-133.72	-21.1	-90.4	117.2	111.3	5.94	19.737		
1,600.0	1,592.3	1,594.3	1,591.4	3.7	3.1	-134.39	-20.8	-98.0	126.7	120.3	6.38	19.871		
1,700.0	1,691.5	1,693.9	1,690.7	4.0	3.3	-134.95	-20.5	-105.6	136.2	129.4	6.81	19.989		
1,800.0	1,790.7	1,793.4	1,789.9	4.2	3.6	-135.45	-20.2	-113.2	145.7	138.4	7.25	20.093		
1,900.0	1,889.9	1,893.0	1,889.2	4.5	3.8	-135.88	-19.9	-120.8	155.2	147.5	7.69	20.187		
2,000.0	1,989.1	1,992.5	1,988.4	4.8	4.0	-136.27	-19.6	-128.4	164.7	156.6	8.12	20.272		
2,100.0	2,088.3	2,092.0	2,087.7	5.1	4.2	-136.61	-19.3	-136.0	174.2	165.7	8.56	20.348		
2,200.0	2,187.6	2,191.6	2,186.9	5.3	4.4	-136.92	-19.0	-143.6	183.7	174.7	9.00	20.418		
2,300.0	2,286.8	2,291.1	2,286.2	5.6	4.6	-137.19	-18.7	-151.1	193.3	183.8	9.44	20.482		
2,400.0	2,386.0	2,390.7	2,385.4	5.9	4.9	-137.44	-18.3	-158.7	202.8	192.9	9.87	20.540		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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: O-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	-142.24	-12.0	-9.3	15.2						
100.0	100.0	100.0	100.0	0.1	0.1	-142.24	-12.0	-9.3	15.2	14.9	0.30	51.246			
200.0	200.0	200.0	200.0	0.3	0.3	-142.24	-12.0	-9.3	15.2	14.6	0.65	23.545			
300.0	300.0	300.0	300.0	0.5	0.5	-142.24	-12.0	-9.3	15.2	14.2	0.99	15.284 CC, ES			
400.0	400.0	400.0	400.0	0.7	0.7	-104.19	-11.3	-10.4	15.6	14.2	1.35	11.578			
500.0	499.9	499.9	499.9	0.9	0.9	-103.79	-9.0	-13.6	16.8	15.0	1.71	9.779			
600.0	599.7	599.9	599.6	1.1	1.1	-103.22	-5.3	-19.0	18.7	16.6	2.11	8.859			
700.0	699.3	699.8	699.2	1.3	1.3	-103.80	-0.3	-26.1	21.4	18.9	2.54	8.411			
779.6	778.3	779.4	778.4	1.5	1.4	-108.04	3.8	-31.9	24.1	21.2	2.91	8.282 SF			
800.0	798.6	799.8	798.7	1.5	1.5	-109.45	4.8	-33.4	24.9	21.9	3.00	8.284			
900.0	897.8	899.6	898.2	1.8	1.7	-115.23	9.9	-40.7	28.8	25.4	3.45	8.349			
1,000.0	997.0	999.5	997.6	2.0	1.9	-119.58	15.0	-48.0	33.0	29.1	3.90	8.464			
1,100.0	1,096.2	1,099.4	1,097.1	2.3	2.2	-122.94	20.1	-55.3	37.4	33.0	4.34	8.598			
1,200.0	1,195.4	1,199.3	1,196.6	2.6	2.4	-125.59	25.2	-62.6	41.8	37.0	4.79	8.735			
1,300.0	1,294.6	1,299.2	1,296.1	2.9	2.6	-127.72	30.3	-70.0	46.3	41.1	5.22	8.868			
1,400.0	1,393.9	1,399.1	1,395.6	3.1	2.9	-129.48	35.4	-77.3	50.9	45.2	5.66	8.993			
1,500.0	1,493.1	1,499.0	1,495.1	3.4	3.1	-130.95	40.5	-84.6	55.5	49.4	6.09	9.109			
1,600.0	1,592.3	1,598.8	1,594.6	3.7	3.3	-132.19	45.6	-91.9	60.1	53.6	6.52	9.217			
1,700.0	1,691.5	1,698.7	1,694.0	4.0	3.5	-133.25	50.7	-99.2	64.8	57.8	6.95	9.316			
1,800.0	1,790.7	1,798.6	1,793.5	4.2	3.8	-134.17	55.8	-106.5	69.5	62.1	7.38	9.408			
1,900.0	1,889.9	1,898.5	1,893.0	4.5	4.0	-134.97	60.9	-113.8	74.2	66.3	7.81	9.492			
2,000.0	1,989.1	1,998.4	1,992.5	4.8	4.2	-135.68	66.0	-121.1	78.9	70.6	8.24	9.570			
2,100.0	2,088.3	2,098.3	2,092.0	5.1	4.5	-136.31	71.1	-128.4	83.6	74.9	8.67	9.642			
2,200.0	2,187.6	2,198.1	2,191.5	5.3	4.7	-136.87	76.2	-135.8	88.3	79.2	9.10	9.709			
2,300.0	2,286.8	2,298.0	2,291.0	5.6	4.9	-137.37	81.3	-143.1	93.0	83.5	9.52	9.770			
2,400.0	2,386.0	2,397.9	2,390.4	5.9	5.2	-137.83	86.4	-150.4	97.8	87.8	9.95	9.828			
2,500.0	2,485.2	2,497.8	2,489.9	6.2	5.4	-138.24	91.6	-157.7	102.5	92.2	10.38	9.882			
2,600.0	2,584.4	2,597.7	2,589.4	6.5	5.6	-138.62	96.7	-165.0	107.3	96.5	10.80	9.932			
2,700.0	2,683.6	2,697.6	2,688.9	6.7	5.9	-138.96	101.8	-172.3	112.0	100.8	11.23	9.978			
2,800.0	2,782.8	2,797.5	2,788.4	7.0	6.1	-139.28	106.9	-179.6	116.8	105.2	11.65	10.022			
2,900.0	2,882.0	2,897.3	2,887.9	7.3	6.3	-139.57	112.0	-186.9	121.6	109.5	12.08	10.063			
3,000.0	2,981.3	2,997.2	2,987.4	7.6	6.6	-139.84	117.1	-194.2	126.3	113.8	12.51	10.102			
3,100.0	3,080.5	3,097.1	3,086.8	7.9	6.8	-140.09	122.2	-201.6	131.1	118.2	12.93	10.138			
3,200.0	3,179.7	3,197.0	3,186.3	8.1	7.0	-140.32	127.3	-208.9	135.9	122.5	13.36	10.173			
3,300.0	3,278.9	3,296.9	3,285.8	8.4	7.3	-140.54	132.4	-216.2	140.7	126.9	13.78	10.205			
3,400.0	3,378.1	3,396.8	3,385.3	8.7	7.5	-140.74	137.5	-223.5	145.4	131.2	14.21	10.236			
3,500.0	3,477.3	3,496.6	3,484.8	9.0	7.7	-140.93	142.6	-230.8	150.2	135.6	14.63	10.265			
3,600.0	3,576.5	3,596.5	3,584.3	9.3	8.0	-141.10	147.7	-238.1	155.0	139.9	15.06	10.293			
3,700.0	3,675.8	3,696.4	3,683.8	9.5	8.2	-141.27	152.8	-245.4	159.8	144.3	15.48	10.319			
3,800.0	3,775.0	3,796.3	3,783.3	9.8	8.4	-141.43	157.9	-252.7	164.5	148.6	15.91	10.344			
3,900.0	3,874.2	3,896.2	3,882.7	10.1	8.7	-141.58	163.0	-260.0	169.3	153.0	16.33	10.368			
4,000.0	3,973.4	3,996.1	3,982.2	10.4	8.9	-141.72	168.1	-267.4	174.1	157.4	16.76	10.390			
4,100.0	4,072.6	4,096.0	4,081.7	10.6	9.1	-141.85	173.2	-274.7	178.9	161.7	17.18	10.412			
4,200.0	4,171.8	4,195.8	4,181.2	10.9	9.4	-141.98	178.3	-282.0	183.7	166.1	17.61	10.433			
4,300.0	4,271.0	4,295.7	4,280.7	11.2	9.6	-142.10	183.4	-289.3	188.5	170.4	18.03	10.453			
4,400.0	4,370.2	4,395.6	4,380.2	11.5	9.8	-142.21	188.5	-296.6	193.3	174.8	18.46	10.471			
4,500.0	4,469.5	4,495.5	4,479.7	11.8	10.1	-142.32	193.6	-303.9	198.0	179.2	18.88	10.490			
4,600.0	4,568.7	4,595.4	4,579.1	12.0	10.3	-142.42	198.7	-311.2	202.8	183.5	19.30	10.507			
4,700.0	4,667.9	4,695.3	4,678.6	12.3	10.5	-142.52	203.8	-318.5	207.6	187.9	19.73	10.524			
4,800.0	4,767.1	4,795.1	4,778.1	12.6	10.8	-142.61	208.9	-325.8	212.4	192.3	20.15	10.540			
4,900.0	4,866.3	4,895.0	4,877.6	12.9	11.0	-142.70	214.0	-333.2	217.2	196.6	20.58	10.555			

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 22-12D (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 22-12D (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: 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)							
0.0	0.0	0.0	0.0	0.0	0.0	35.23	12.4	8.7	15.2						
100.0	100.0	100.0	100.0	0.1	0.1	35.23	12.4	8.7	15.2	14.9	0.30	51.101			
200.0	200.0	200.0	200.0	0.3	0.3	35.23	12.4	8.7	15.2	14.5	0.65	23.479			
300.0	300.0	300.0	300.0	0.5	0.5	35.23	12.4	8.7	15.2	14.2	0.99	15.241 CC			
400.0	400.0	399.8	399.8	0.7	0.7	73.41	13.5	8.1	15.4	14.0	1.35	11.402 ES			
500.0	499.9	499.7	499.6	0.9	0.9	74.21	16.9	6.2	15.9	14.2	1.71	9.300			
600.0	599.7	599.5	599.2	1.1	1.1	75.42	22.6	3.1	16.9	14.8	2.11	8.012			
700.0	699.3	699.3	698.6	1.3	1.3	76.90	30.6	-1.4	18.2	15.7	2.54	7.162			
779.6	778.3	778.7	777.5	1.5	1.5	78.17	38.6	-5.8	19.6	16.6	2.93	6.674			
800.0	798.6	799.1	797.7	1.5	1.5	78.36	40.9	-7.0	20.0	16.9	3.03	6.582			
900.0	897.8	898.8	896.4	1.8	1.8	75.39	53.4	-14.0	22.5	18.9	3.55	6.344 SF			
1,000.0	997.0	998.5	994.7	2.0	2.1	68.12	68.0	-22.1	26.3	22.2	4.04	6.506			
1,100.0	1,096.2	1,098.4	1,093.0	2.3	2.5	61.71	83.3	-30.5	30.7	26.2	4.49	6.840			
1,200.0	1,195.4	1,198.2	1,191.3	2.6	2.8	56.97	98.5	-39.0	35.5	30.6	4.94	7.195			
1,300.0	1,294.6	1,298.1	1,289.6	2.9	3.1	53.37	113.8	-47.4	40.5	35.1	5.37	7.539			
1,400.0	1,393.9	1,397.9	1,387.9	3.1	3.5	50.56	129.0	-55.9	45.5	39.7	5.79	7.863			
1,500.0	1,493.1	1,497.8	1,486.2	3.4	3.8	48.33	144.2	-64.3	50.7	44.5	6.21	8.162			
1,600.0	1,592.3	1,597.6	1,584.6	3.7	4.1	46.50	159.5	-72.8	55.9	49.3	6.63	8.436			
1,700.0	1,691.5	1,697.5	1,682.9	4.0	4.5	44.99	174.7	-81.2	61.2	54.2	7.05	8.687			
1,800.0	1,790.7	1,797.3	1,781.2	4.2	4.8	43.72	190.0	-89.7	66.5	59.1	7.46	8.916			
1,900.0	1,889.9	1,897.2	1,879.5	4.5	5.2	42.64	205.2	-98.1	71.8	64.0	7.87	9.125			
2,000.0	1,989.1	1,997.0	1,977.8	4.8	5.5	41.71	220.5	-106.6	77.2	68.9	8.29	9.317			
2,100.0	2,088.3	2,096.9	2,076.1	5.1	5.9	40.90	235.7	-115.1	82.6	73.9	8.70	9.494			
2,200.0	2,187.6	2,196.7	2,174.4	5.3	6.2	40.19	251.0	-123.5	88.0	78.9	9.11	9.656			
2,300.0	2,286.8	2,296.6	2,272.8	5.6	6.6	39.56	266.2	-132.0	93.4	83.9	9.52	9.806			
2,400.0	2,386.0	2,396.4	2,371.1	5.9	6.9	39.00	281.5	-140.4	98.8	88.9	9.93	9.945			
2,500.0	2,485.2	2,496.3	2,469.4	6.2	7.3	38.50	296.7	-148.9	104.2	93.9	10.35	10.073			
2,600.0	2,584.4	2,596.1	2,567.7	6.5	7.6	38.05	312.0	-157.3	109.6	98.9	10.76	10.193			
2,700.0	2,683.6	2,696.0	2,666.0	6.7	8.0	37.64	327.2	-165.8	115.1	103.9	11.17	10.305			
2,800.0	2,782.8	2,795.8	2,764.3	7.0	8.3	37.26	342.5	-174.2	120.5	108.9	11.58	10.409			
2,900.0	2,882.0	2,895.7	2,862.7	7.3	8.7	36.92	357.7	-182.7	126.0	114.0	11.99	10.506			
3,000.0	2,981.3	2,995.5	2,961.0	7.6	9.0	36.61	373.0	-191.1	131.4	119.0	12.40	10.598			
3,100.0	3,080.5	3,095.4	3,059.3	7.9	9.4	36.32	388.2	-199.6	136.9	124.1	12.81	10.683			
3,200.0	3,179.7	3,195.2	3,157.6	8.1	9.7	36.06	403.5	-208.0	142.3	129.1	13.22	10.764			
3,300.0	3,278.9	3,295.1	3,255.9	8.4	10.1	35.81	418.7	-216.5	147.8	134.1	13.63	10.840			
3,400.0	3,378.1	3,394.9	3,354.2	8.7	10.4	35.58	434.0	-224.9	153.2	139.2	14.04	10.912			
3,500.0	3,477.3	3,494.8	3,452.5	9.0	10.8	35.37	449.2	-233.4	158.7	144.3	14.45	10.980			
3,600.0	3,576.5	3,594.6	3,550.9	9.3	11.1	35.17	464.5	-241.8	164.2	149.3	14.86	11.045			
3,700.0	3,675.8	3,694.5	3,649.2	9.5	11.5	34.99	479.7	-250.3	169.6	154.4	15.27	11.106			
3,800.0	3,775.0	3,794.3	3,747.5	9.8	11.8	34.81	495.0	-258.7	175.1	159.4	15.69	11.164			
3,900.0	3,874.2	3,894.2	3,845.8	10.1	12.2	34.65	510.2	-267.2	180.6	164.5	16.10	11.219			
4,000.0	3,973.4	3,994.0	3,944.1	10.4	12.5	34.50	525.5	-275.6	186.0	169.5	16.51	11.271			
4,100.0	4,072.6	4,093.9	4,042.4	10.6	12.9	34.35	540.7	-284.1	191.5	174.6	16.92	11.321			
4,200.0	4,171.8	4,193.7	4,140.7	10.9	13.2	34.21	556.0	-292.5	197.0	179.7	17.33	11.369			
4,300.0	4,271.0	4,293.5	4,239.1	11.2	13.6	34.08	571.2	-301.0	202.5	184.7	17.74	11.415			
4,400.0	4,370.2	4,393.4	4,337.4	11.5	13.9	33.96	586.5	-309.4	207.9	189.8	18.15	11.458			
4,500.0	4,469.5	4,493.2	4,435.7	11.8	14.3	33.85	601.7	-317.9	213.4	194.9	18.56	11.500			
4,600.0	4,568.7	4,593.1	4,534.0	12.0	14.6	33.73	617.0	-326.3	218.9	199.9	18.97	11.540			

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 22-12D (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 22-12D (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	35.20	24.4	17.2	29.9					
100.0	100.0	100.0	100.0	0.1	0.1	35.20	24.4	17.2	29.9	29.6	0.30	100.651		
200.0	200.0	200.0	200.0	0.3	0.3	35.20	24.4	17.2	29.9	29.2	0.65	46.245		
300.0	300.0	300.0	300.0	0.5	0.5	35.20	24.4	17.2	29.9	28.9	0.99	30.019 CC		
400.0	400.0	399.6	399.6	0.7	0.7	73.38	25.6	16.7	30.2	28.8	1.35	22.431 ES		
500.0	499.9	499.2	499.1	0.9	0.9	74.20	29.2	15.3	31.2	29.4	1.71	18.224		
600.0	599.7	598.7	598.4	1.1	1.1	75.46	35.2	12.8	32.8	30.7	2.10	15.608		
700.0	699.3	698.2	697.5	1.3	1.3	77.03	43.6	9.4	35.1	32.6	2.53	13.853		
779.6	778.3	777.4	776.2	1.5	1.5	78.40	52.0	6.0	37.4	34.5	2.92	12.830		
800.0	798.6	797.8	796.3	1.5	1.5	78.69	54.4	5.0	38.1	35.1	3.02	12.628		
900.0	897.8	897.2	894.8	1.8	1.8	78.06	67.5	-0.4	42.1	38.6	3.53	11.931		
1,000.0	997.0	996.5	992.6	2.0	2.1	74.78	83.0	-6.7	47.4	43.4	4.06	11.695 SF		
1,100.0	1,096.2	1,095.4	1,089.7	2.3	2.5	69.90	100.8	-14.0	54.4	49.8	4.57	11.888		
1,200.0	1,195.4	1,194.2	1,186.1	2.6	2.9	64.42	120.8	-22.1	63.2	58.1	5.05	12.500		
1,300.0	1,294.6	1,293.6	1,282.9	2.9	3.3	59.92	141.4	-30.6	72.9	67.4	5.51	13.227		
1,400.0	1,393.9	1,393.0	1,379.8	3.1	3.7	56.49	162.1	-39.0	82.9	77.0	5.96	13.927		
1,500.0	1,493.1	1,492.4	1,476.6	3.4	4.1	53.81	182.8	-47.4	93.2	86.8	6.39	14.582		
1,600.0	1,592.3	1,591.7	1,573.5	3.7	4.5	51.66	203.5	-55.9	103.7	96.9	6.83	15.187		
1,700.0	1,691.5	1,691.1	1,670.3	4.0	4.9	49.91	224.2	-64.3	114.3	107.0	7.26	15.743		
1,800.0	1,790.7	1,790.5	1,767.1	4.2	5.3	48.46	244.8	-72.8	124.9	117.2	7.69	16.253		
1,900.0	1,889.9	1,889.9	1,864.0	4.5	5.8	47.23	265.5	-81.2	135.6	127.5	8.11	16.719		
2,000.0	1,989.1	1,989.3	1,960.8	4.8	6.2	46.19	286.2	-89.6	146.4	137.9	8.54	17.148		
2,100.0	2,088.3	2,088.7	2,057.7	5.1	6.6	45.28	306.9	-98.1	157.2	148.3	8.96	17.541		
2,200.0	2,187.6	2,188.1	2,154.5	5.3	7.0	44.50	327.5	-106.5	168.1	158.7	9.39	17.904		
2,300.0	2,286.8	2,287.4	2,251.4	5.6	7.5	43.81	348.2	-114.9	179.0	169.2	9.81	18.239		
2,400.0	2,386.0	2,386.8	2,348.2	5.9	7.9	43.20	368.9	-123.4	189.9	179.6	10.24	18.548		
2,500.0	2,485.2	2,486.2	2,445.0	6.2	8.3	42.65	389.6	-131.8	200.8	190.1	10.66	18.836		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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		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	35.48	36.4	26.0	44.7				
100.0	100.0	100.0	100.0	0.1	0.1	35.48	36.4	26.0	44.7	44.4	0.30	150.750	
200.0	200.0	200.0	200.0	0.3	0.3	35.48	36.4	26.0	44.7	44.1	0.65	69.264	CC, ES
300.0	300.0	299.3	299.3	0.5	0.5	34.16	37.6	25.5	45.5	44.5	1.00	45.701	
400.0	400.0	398.5	398.4	0.7	0.7	69.80	41.3	24.3	47.5	46.1	1.35	35.162	
500.0	499.9	497.6	497.3	0.9	0.9	68.27	47.4	22.3	50.3	48.6	1.72	29.192	
600.0	599.7	596.7	596.0	1.1	1.1	67.40	55.9	19.4	53.8	51.7	2.12	25.384	
700.0	699.3	695.6	694.2	1.3	1.4	67.11	66.9	15.7	58.1	55.6	2.56	22.736	
779.6	778.3	774.3	772.1	1.5	1.6	67.22	77.3	12.2	62.0	59.1	2.94	21.128	
800.0	798.6	794.4	792.0	1.5	1.7	67.26	80.2	11.3	63.1	60.1	3.04	20.799	
900.0	897.8	893.1	889.3	1.8	2.0	66.48	95.9	6.0	69.6	66.0	3.54	19.664	
1,000.0	997.0	991.4	985.8	2.0	2.3	64.48	113.9	0.0	77.8	73.7	4.04	19.235	SF
1,100.0	1,096.2	1,089.3	1,081.3	2.3	2.7	61.72	134.1	-6.8	88.0	83.4	4.54	19.364	
1,200.0	1,195.4	1,186.6	1,175.6	2.6	3.2	58.61	156.5	-14.4	100.2	95.2	5.02	19.954	
1,300.0	1,294.6	1,283.3	1,268.9	2.9	3.7	55.44	181.1	-22.6	114.8	109.3	5.48	20.942	
1,400.0	1,393.9	1,381.9	1,363.6	3.1	4.1	52.67	207.1	-31.4	130.5	124.6	5.92	22.031	
1,500.0	1,493.1	1,480.5	1,458.3	3.4	4.6	50.50	233.1	-40.1	146.4	140.1	6.36	23.028	
1,600.0	1,592.3	1,579.1	1,553.0	3.7	5.1	48.75	259.1	-48.8	162.5	155.7	6.79	23.936	
1,700.0	1,691.5	1,677.7	1,647.6	4.0	5.6	47.32	285.1	-57.5	178.8	171.5	7.22	24.762	
1,800.0	1,790.7	1,776.3	1,742.3	4.2	6.1	46.13	311.1	-66.3	195.1	187.4	7.65	25.514	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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 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	35.20	48.8	34.4	59.7					
100.0	100.0	100.0	100.0	0.1	0.1	35.20	48.8	34.4	59.7	59.4	0.30	201.301		
200.0	200.0	200.0	200.0	0.3	0.3	35.20	48.8	34.4	59.7	59.1	0.65	92.490 CC, ES		
300.0	300.0	299.0	299.0	0.5	0.5	34.23	50.0	34.0	60.5	59.5	1.00	60.813		
400.0	400.0	398.0	397.9	0.7	0.7	70.46	53.7	32.9	62.6	61.2	1.35	46.347		
500.0	499.9	496.9	496.6	0.9	0.9	69.32	59.8	31.0	65.4	63.7	1.72	38.003		
600.0	599.7	595.7	594.9	1.1	1.1	68.69	68.3	28.3	69.1	66.9	2.12	32.583		
700.0	699.3	694.3	692.9	1.3	1.4	68.51	79.3	24.8	73.5	70.9	2.56	28.756		
779.6	778.3	772.8	770.6	1.5	1.6	68.63	89.7	21.6	77.6	74.6	2.94	26.412		
800.0	798.6	792.9	790.5	1.5	1.7	68.67	92.6	20.7	78.7	75.7	3.04	25.922		
900.0	897.8	891.3	887.5	1.8	2.0	68.10	108.3	15.7	85.3	81.8	3.54	24.091		
1,000.0	997.0	989.3	983.7	2.0	2.3	66.47	126.3	10.1	93.7	89.6	4.06	23.100		
1,100.0	1,096.2	1,086.9	1,079.0	2.3	2.7	64.14	146.6	3.7	104.0	99.4	4.57	22.757 SF		
1,200.0	1,195.4	1,183.9	1,173.1	2.6	3.2	61.41	169.0	-3.4	116.3	111.2	5.07	22.937		
1,300.0	1,294.6	1,280.3	1,265.9	2.9	3.6	58.53	193.6	-11.1	130.7	125.2	5.55	23.552		
1,400.0	1,393.9	1,375.8	1,357.4	3.1	4.2	55.68	220.1	-19.4	147.5	141.5	6.01	24.531		
1,500.0	1,493.1	1,470.5	1,447.2	3.4	4.7	52.97	248.5	-28.3	166.6	160.2	6.46	25.816		
1,600.0	1,592.3	1,566.1	1,537.3	3.7	5.3	50.46	279.1	-38.0	187.9	181.0	6.88	27.325		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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							
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	-155.90	-42.3	-18.9	46.3				
100.0	100.0	100.0	100.0	0.1	0.1	-155.90	-42.3	-18.9	46.3	46.0	0.30	156.022	
200.0	200.0	200.0	200.0	0.3	0.3	-155.90	-42.3	-18.9	46.3	45.6	0.65	71.686	
300.0	300.0	300.0	300.0	0.5	0.5	-155.90	-42.3	-18.9	46.3	45.3	0.99	46.533 CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	-119.41	-42.3	-18.9	46.9	45.6	1.34	34.886	
500.0	499.9	499.9	499.8	0.9	0.8	-124.90	-42.7	-17.7	49.0	47.3	1.70	28.817	
600.0	599.7	599.2	599.1	1.1	1.0	-134.72	-44.0	-14.0	53.8	51.7	2.07	26.021	
700.0	699.3	697.5	697.2	1.3	1.2	-146.26	-46.2	-8.0	63.0	60.5	2.43	25.863 SF	
779.6	778.3	774.9	774.3	1.5	1.4	-154.88	-48.5	-1.6	74.3	71.6	2.72	27.291	
800.0	798.6	794.6	793.9	1.5	1.4	-156.91	-49.2	0.2	77.8	75.0	2.80	27.835	
900.0	897.8	890.6	889.2	1.8	1.7	-165.25	-53.0	10.7	97.0	93.8	3.15	30.765	
1,000.0	997.0	985.7	983.4	2.0	1.9	-171.54	-57.6	23.2	119.4	115.9	3.51	34.043	
1,100.0	1,096.2	1,082.2	1,078.8	2.3	2.2	-176.12	-62.5	36.7	143.4	139.6	3.86	37.143	
1,200.0	1,195.4	1,178.7	1,174.2	2.6	2.5	-179.38	-67.4	50.3	168.2	163.9	4.22	39.866	
1,300.0	1,294.6	1,275.2	1,269.7	2.9	2.8	178.19	-72.4	63.8	193.2	188.7	4.57	42.241	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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							
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	-162.40	-30.2	-9.6	31.7				
100.0	100.0	100.0	100.0	0.1	0.1	-162.40	-30.2	-9.6	31.7	31.4	0.30	106.914	
200.0	200.0	200.0	200.0	0.3	0.3	-162.40	-30.2	-9.6	31.7	31.1	0.65	49.123	
300.0	300.0	300.0	300.0	0.5	0.5	-162.40	-30.2	-9.6	31.7	30.7	0.99	31.887 CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	-126.40	-30.2	-9.6	32.5	31.1	1.34	24.153	
500.0	499.9	500.1	500.0	0.9	0.8	-133.69	-30.2	-8.3	34.7	33.0	1.70	20.437	
600.0	599.7	599.6	599.6	1.1	1.0	-146.15	-30.2	-4.4	39.6	37.5	2.06	19.229 SF	
700.0	699.3	698.4	698.1	1.3	1.2	-159.67	-30.2	2.1	49.0	46.6	2.42	20.251	
779.6	778.3	776.3	775.6	1.5	1.4	-168.92	-30.1	8.9	60.5	57.8	2.71	22.328	
800.0	798.6	796.1	795.4	1.5	1.4	-170.98	-30.1	10.9	64.0	61.2	2.78	22.987	
900.0	897.8	892.7	891.4	1.8	1.7	-179.30	-30.1	22.1	82.7	79.6	3.15	26.226	
1,000.0	997.0	989.5	987.3	2.0	1.9	174.66	-30.0	35.3	103.9	100.4	3.53	29.422	
1,100.0	1,096.2	1,086.7	1,083.6	2.3	2.2	170.61	-29.9	48.7	125.9	122.0	3.91	32.179	
1,200.0	1,195.4	1,184.0	1,179.9	2.6	2.5	167.77	-29.8	62.0	148.4	144.1	4.30	34.522	
1,300.0	1,294.6	1,281.2	1,276.2	2.9	2.7	165.68	-29.8	75.4	171.1	166.4	4.68	36.520	
1,400.0	1,393.9	1,378.4	1,372.5	3.1	3.0	164.08	-29.7	88.7	194.0	188.9	5.07	38.235	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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							
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	400.1	400.1	0.7	0.7	-145.73	-17.8	0.4	18.8	17.5	1.35	13.991	
500.0	499.9	500.0	499.9	0.9	0.9	-161.61	-16.4	4.1	21.8	20.1	1.70	12.788 SF	
600.0	599.7	599.4	599.0	1.1	1.1	-178.65	-14.2	10.2	29.2	27.1	2.07	14.107	
700.0	699.3	697.9	697.2	1.3	1.3	169.04	-11.1	18.6	41.9	39.4	2.45	17.109	
779.6	778.3	775.6	774.4	1.5	1.5	162.58	-8.0	26.9	55.5	52.8	2.76	20.114	
800.0	798.6	795.4	794.0	1.5	1.5	161.28	-7.1	29.3	59.4	56.6	2.84	20.920	
900.0	897.8	892.6	890.2	1.8	1.8	156.10	-2.5	42.0	79.8	76.5	3.25	24.543	
1,000.0	997.0	990.2	986.9	2.0	2.1	152.86	2.4	55.1	100.8	97.1	3.67	27.476	
1,100.0	1,096.2	1,087.8	1,083.5	2.3	2.3	150.73	7.2	68.3	122.0	117.9	4.09	29.828	
1,200.0	1,195.4	1,185.5	1,180.1	2.6	2.6	149.24	12.0	81.4	143.3	138.8	4.52	31.745	
1,300.0	1,294.6	1,283.1	1,276.8	2.9	2.9	148.13	16.9	94.5	164.7	159.8	4.94	33.331	
1,400.0	1,393.9	1,380.8	1,373.4	3.1	3.2	147.28	21.7	107.7	186.2	180.8	5.37	34.663	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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: 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	126.41	-5.8	7.9	9.8					
100.0	100.0	100.0	100.0	0.1	0.1	126.41	-5.8	7.9	9.8	9.5	0.30	33.089		
200.0	200.0	200.0	200.0	0.3	0.3	126.41	-5.8	7.9	9.8	9.2	0.65	15.203		
300.0	300.0	300.0	300.0	0.5	0.5	126.41	-5.8	7.9	9.8	8.8	0.99	9.869 CC, ES		
400.0	400.0	399.9	399.9	0.7	0.7	159.88	-5.1	9.0	11.5	10.2	1.34	8.565 SF		
500.0	499.9	499.6	499.5	0.9	0.9	152.13	-2.8	12.1	16.9	15.2	1.70	9.910		
600.0	599.7	598.8	598.5	1.1	1.1	146.41	0.9	17.4	26.1	24.0	2.07	12.575		
700.0	699.3	697.4	696.7	1.3	1.3	142.93	6.1	24.7	39.1	36.6	2.46	15.868		
779.6	778.3	775.3	774.1	1.5	1.5	141.16	11.3	32.0	52.1	49.3	2.79	18.667		
800.0	798.6	795.2	793.8	1.5	1.5	140.80	12.8	34.0	55.8	52.9	2.88	19.389		
900.0	897.8	892.2	889.8	1.8	1.8	138.70	20.7	45.2	74.9	71.6	3.32	22.573		
1,000.0	997.0	989.0	985.3	2.0	2.1	136.43	30.0	58.3	95.7	91.9	3.77	25.371		
1,100.0	1,096.2	1,086.6	1,081.4	2.3	2.4	134.76	39.7	72.0	117.1	112.8	4.24	27.637		
1,200.0	1,195.4	1,184.3	1,177.6	2.6	2.7	133.60	49.5	85.6	138.5	133.8	4.70	29.445		
1,300.0	1,294.6	1,281.9	1,273.8	2.9	3.1	132.75	59.2	99.3	160.0	154.8	5.17	30.917		
1,400.0	1,393.9	1,379.5	1,370.0	3.1	3.4	132.10	68.9	113.0	181.5	175.8	5.65	32.134		
1,500.0	1,493.1	1,477.2	1,466.2	3.4	3.7	131.59	78.6	126.7	203.0	196.9	6.12	33.157		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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 22-5D (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 +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	69.28	6.2	16.4	17.5						
100.0	100.0	100.0	100.0	0.1	0.1	69.28	6.2	16.4	17.5	17.2	0.30	58.975			
200.0	200.0	200.0	200.0	0.3	0.3	69.28	6.2	16.4	17.5	16.9	0.65	27.097	CC, ES		
300.0	300.0	299.6	299.6	0.5	0.5	67.48	7.1	17.2	18.7	17.7	1.00	18.751			
400.0	400.0	399.0	398.9	0.7	0.7	104.33	10.0	19.9	22.6	21.2	1.35	16.764	SF		
500.0	499.9	498.1	497.8	0.9	0.9	106.47	14.8	24.2	29.5	27.8	1.71	17.269			
600.0	599.7	596.8	596.1	1.1	1.1	109.59	21.4	30.3	39.6	37.5	2.09	18.919			
700.0	699.3	694.9	693.5	1.3	1.4	112.52	29.8	38.0	52.9	50.4	2.51	21.101			
779.6	778.3	772.4	770.3	1.5	1.6	114.49	37.8	45.3	65.8	62.9	2.86	22.988			
800.0	798.6	792.2	789.8	1.5	1.6	114.95	40.0	47.3	69.4	66.4	2.95	23.493			
900.0	897.8	888.8	885.0	1.8	2.0	116.06	51.9	58.2	88.4	84.9	3.42	25.808			
1,000.0	997.0	984.8	979.3	2.0	2.3	116.00	65.4	70.6	109.3	105.4	3.91	27.977			
1,100.0	1,096.2	1,082.4	1,074.9	2.3	2.7	115.70	79.9	83.9	131.1	126.7	4.40	29.774			
1,200.0	1,195.4	1,180.0	1,170.4	2.6	3.1	115.49	94.4	97.2	152.9	148.0	4.90	31.177			
1,300.0	1,294.6	1,277.6	1,266.0	2.9	3.4	115.32	108.9	110.4	174.6	169.2	5.41	32.298			
1,400.0	1,393.9	1,375.2	1,361.6	3.1	3.8	115.20	123.5	123.7	196.4	190.5	5.91	33.212			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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: 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	54.07	18.2	25.1	31.0				
100.0	100.0	100.0	100.0	0.1	0.1	54.07	18.2	25.1	31.0	30.7	0.30	104.524	
200.0	200.0	200.0	200.0	0.3	0.3	54.07	18.2	25.1	31.0	30.4	0.65	48.025 CC, ES	
300.0	300.0	299.2	299.2	0.5	0.5	53.39	19.2	25.9	32.3	31.3	0.99	32.422	
400.0	400.0	398.3	398.2	0.7	0.7	91.52	22.3	28.2	36.0	34.7	1.34	26.802	
500.0	499.9	497.1	496.8	0.9	0.9	94.15	27.5	32.0	42.4	40.7	1.70	24.864	
600.0	599.7	595.5	594.8	1.1	1.1	97.84	34.6	37.3	51.5	49.4	2.08	24.692 SF	
700.0	699.3	693.4	692.0	1.3	1.4	101.62	43.7	44.1	63.5	61.0	2.50	25.435	
779.6	778.3	770.8	768.7	1.5	1.6	104.35	52.3	50.5	75.3	72.5	2.86	26.372	
800.0	798.6	790.6	788.2	1.5	1.6	105.01	54.7	52.3	78.6	75.7	2.95	26.663	
900.0	897.8	887.1	883.4	1.8	2.0	107.07	67.6	61.9	96.3	92.8	3.42	28.121	
1,000.0	997.0	982.9	977.4	2.0	2.3	107.80	82.3	72.8	116.0	112.1	3.91	29.644	
1,100.0	1,096.2	1,077.9	1,070.2	2.3	2.7	107.74	98.8	85.1	137.8	133.4	4.42	31.196	
1,200.0	1,195.4	1,172.6	1,162.2	2.6	3.1	107.23	117.0	98.6	161.6	156.6	4.93	32.786	
1,300.0	1,294.6	1,269.6	1,256.2	2.9	3.5	106.71	136.1	112.9	185.9	180.5	5.45	34.127	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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			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	47.90	30.6	33.9	45.6					
100.0	100.0	100.0	100.0	0.1	0.1	47.90	30.6	33.9	45.6	45.3	0.30	153.810		
200.0	200.0	200.0	200.0	0.3	0.3	47.90	30.6	33.9	45.6	45.0	0.65	70.670	CC, ES	
300.0	300.0	298.9	298.9	0.5	0.5	47.38	31.7	34.5	46.9	45.9	0.99	47.128		
400.0	400.0	397.6	397.5	0.7	0.7	85.28	35.1	36.3	50.4	49.1	1.34	37.553		
500.0	499.9	496.1	495.8	0.9	0.9	87.03	40.7	39.3	56.2	54.5	1.70	33.034		
600.0	599.7	594.3	593.6	1.1	1.1	89.85	48.5	43.6	64.4	62.4	2.08	30.926		
700.0	699.3	692.0	690.7	1.3	1.4	93.08	58.4	49.0	75.2	72.7	2.50	30.093		
779.6	778.3	769.4	767.3	1.5	1.6	95.65	67.8	54.1	85.6	82.8	2.86	29.952	SF	
800.0	798.6	789.2	786.9	1.5	1.6	96.30	70.4	55.6	88.6	85.6	2.95	29.995		
900.0	897.8	885.8	882.1	1.8	2.0	98.48	84.5	63.2	104.4	101.0	3.43	30.424		
1,000.0	997.0	981.7	976.3	2.0	2.3	99.44	100.6	72.0	122.5	118.5	3.93	31.159		
1,100.0	1,096.2	1,077.0	1,069.3	2.3	2.7	99.60	118.6	81.8	142.6	138.1	4.44	32.096		
1,200.0	1,195.4	1,171.3	1,160.9	2.6	3.1	99.25	138.5	92.6	164.7	159.7	4.96	33.181		
1,300.0	1,294.6	1,264.7	1,251.0	2.9	3.6	98.59	160.1	104.4	188.8	183.3	5.49	34.387		

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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	45.37	42.6	43.2	60.7						
100.0	100.0	100.0	100.0	0.1	0.1	45.37	42.6	43.2	60.7	60.4	0.30	204.455			
200.0	200.0	200.0	200.0	0.3	0.3	45.37	42.6	43.2	60.7	60.0	0.65	93.939	CC, ES		
300.0	300.0	298.6	298.5	0.5	0.5	44.88	43.8	43.6	61.8	60.8	0.99	62.218			
400.0	400.0	397.0	396.9	0.7	0.7	82.49	47.4	45.0	65.2	63.9	1.34	48.575			
500.0	499.9	495.3	495.0	0.9	0.9	83.45	53.3	47.2	70.6	68.9	1.70	41.456			
600.0	599.7	593.2	592.5	1.1	1.1	85.31	61.5	50.4	78.1	76.0	2.09	37.439			
700.0	699.3	690.8	689.5	1.3	1.4	87.69	72.0	54.4	87.8	85.3	2.50	35.070			
779.6	778.3	768.2	766.1	1.5	1.6	89.73	82.0	58.2	97.1	94.2	2.87	33.883			
800.0	798.6	788.0	785.6	1.5	1.6	90.27	84.8	59.3	99.7	96.8	2.96	33.684			
900.0	897.8	884.6	880.9	1.8	2.0	92.12	99.8	65.0	114.0	110.6	3.45	33.086			
1,000.0	997.0	980.7	975.3	2.0	2.3	92.92	116.9	71.5	130.4	126.5	3.95	33.021	SF		
1,100.0	1,096.2	1,076.1	1,068.5	2.3	2.7	93.01	136.1	78.8	148.8	144.4	4.47	33.324			
1,200.0	1,195.4	1,170.8	1,160.4	2.6	3.1	92.61	157.2	86.9	169.3	164.3	4.99	33.901			
1,300.0	1,294.6	1,264.5	1,250.8	2.9	3.6	91.89	180.3	95.7	191.7	186.2	5.53	34.695			

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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							
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	-143.94	-36.4	-26.5	45.1				
100.0	100.0	100.0	100.0	0.1	0.1	-143.94	-36.4	-26.5	45.1	44.8	0.30	151.862	
200.0	200.0	200.0	200.0	0.3	0.3	-143.94	-36.4	-26.5	45.1	44.4	0.65	69.774	
300.0	300.0	300.0	300.0	0.5	0.5	-143.94	-36.4	-26.5	45.1	44.1	0.99	45.292 CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	-107.63	-36.4	-26.5	45.4	44.1	1.35	33.776	
500.0	499.9	498.8	498.8	0.9	0.8	-111.37	-37.1	-27.6	47.9	46.2	1.70	28.168	
600.0	599.7	597.5	597.4	1.1	1.0	-115.73	-39.0	-30.9	53.8	51.8	2.07	26.025	
700.0	699.3	695.7	695.4	1.3	1.2	-119.80	-42.2	-36.4	63.4	60.9	2.46	25.800 SF	
779.6	778.3	773.8	773.2	1.5	1.4	-122.56	-45.6	-42.2	73.5	70.7	2.78	26.426	
800.0	798.6	794.0	793.3	1.5	1.4	-123.27	-46.6	-43.8	76.3	73.4	2.87	26.627	
900.0	897.8	893.0	891.9	1.8	1.6	-126.10	-51.1	-51.6	90.2	86.9	3.28	27.463	
1,000.0	997.0	991.9	990.4	2.0	1.9	-128.17	-55.7	-59.4	104.2	100.5	3.71	28.113	
1,100.0	1,096.2	1,090.8	1,088.9	2.3	2.1	-129.75	-60.3	-67.3	118.4	114.3	4.14	28.630	
1,200.0	1,195.4	1,189.8	1,187.5	2.6	2.3	-130.99	-64.9	-75.1	132.6	128.1	4.57	29.048	
1,300.0	1,294.6	1,288.7	1,286.0	2.9	2.5	-131.99	-69.4	-82.9	146.9	141.9	5.00	29.394	
1,400.0	1,393.9	1,387.7	1,384.5	3.1	2.8	-132.81	-74.0	-90.7	161.2	155.8	5.43	29.683	
1,500.0	1,493.1	1,486.6	1,483.1	3.4	3.0	-133.50	-78.6	-98.5	175.5	169.7	5.87	29.929	
1,600.0	1,592.3	1,585.6	1,581.6	3.7	3.2	-134.09	-83.2	-106.3	189.9	183.6	6.30	30.140	
1,700.0	1,691.5	1,684.5	1,680.1	4.0	3.5	-134.59	-87.8	-114.1	204.3	197.5	6.74	30.323	

Cathedral Energy Services

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well OXY 22-12D (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 22-12D (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 22-12D (OXY 22 Pad)
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.70°

