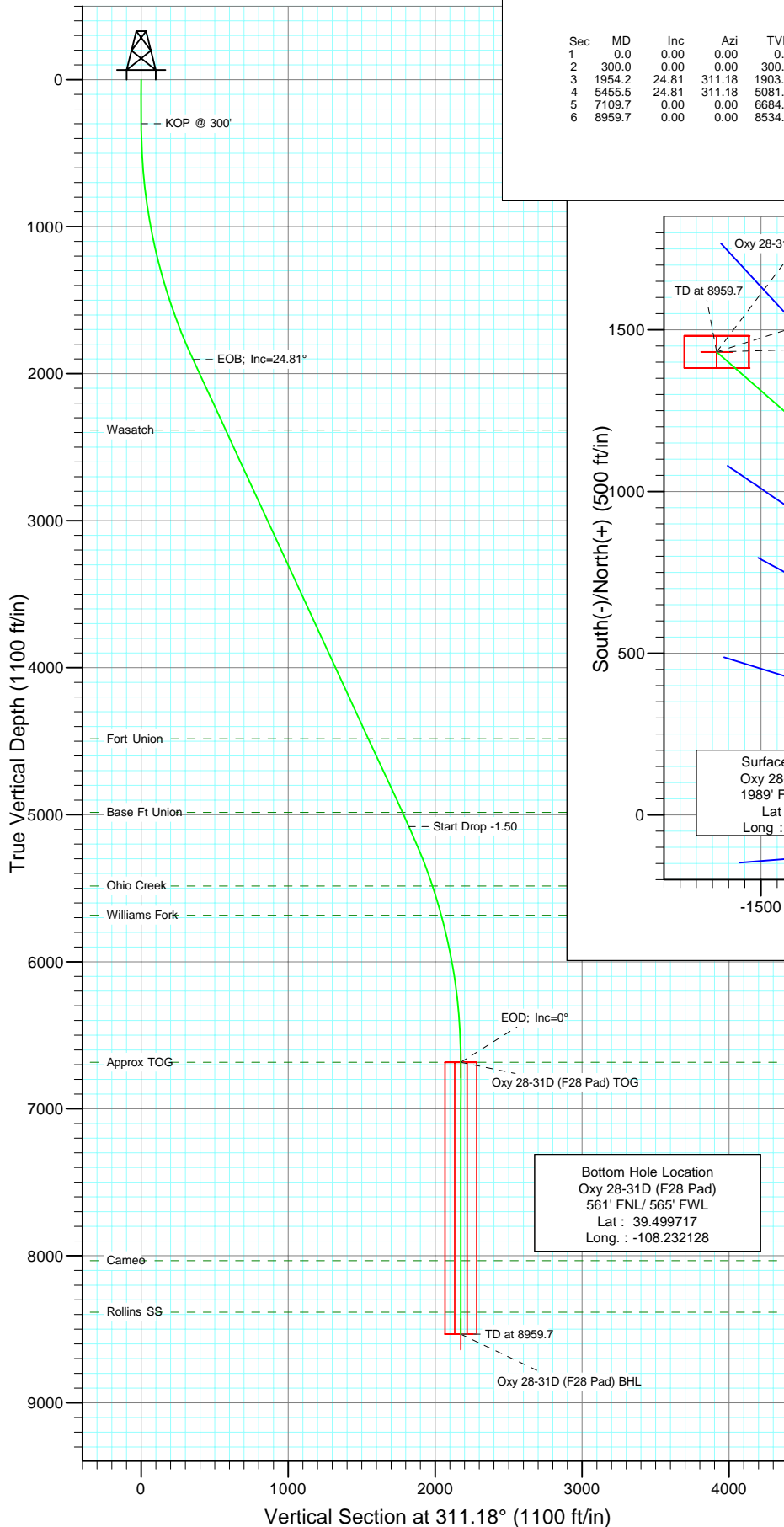




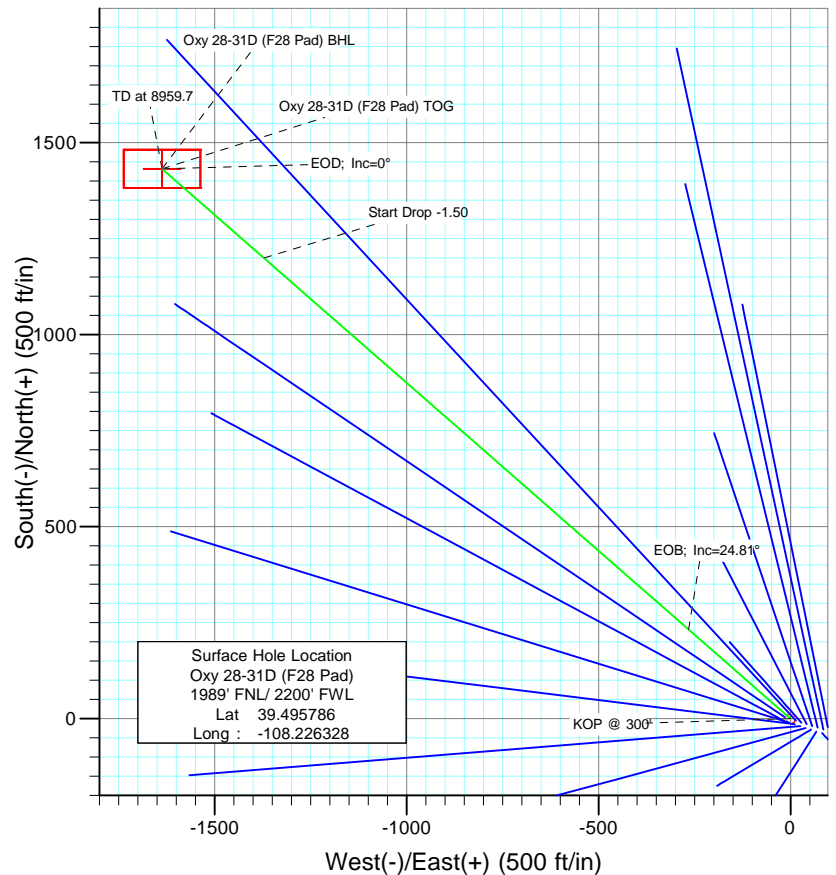
Berry Petroleum Company

Project: Garfield County
Site: SENW S28-T6S-R97W (F28 Pad)
Well: Oxy 28-31D (F28 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	1954.2	24.81	311.18	1903.0	232.2	-265.4	1.50	311.18	352.6	
4	5455.5	24.81	311.18	5081.0	1199.7	-1371.3	0.00	0.00	1822.0	
5	7109.7	0.00	0.00	6684.0	1431.9	-1636.7	1.50	180.00	2174.6	Oxy 28-31D (F28 Pad) TOG
6	8959.7	0.00	0.00	8534.0	1431.9	-1636.7	0.00	0.00	2174.6	Oxy 28-31D (F28 Pad) BHL



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2384.0	2484.2	Wasatch
4484.0	4797.7	Fort Union
4984.0	5348.6	Base Ft Union
5484.0	5889.0	Ohio Creek
5684.0	6097.9	Williams Fork
6684.0	7109.7	Approx TOG
8034.0	8459.7	Cameo
8384.0	8809.7	Rollins SS



Azimuths to True North
Magnetic North: 10.64°

Magnetic Field
Strength: 52394.5snT
Dip Angle: 65.75°
Date: 10/22/2009
Model: IGRF200510

DESIGN DETAILS: Plan #1

95XXX; BH
KBE @ 8308.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
Oxy 28-31D (F28 Pad) BHL	311.18	Slot	0.0	0.0	0.0

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site:	SENW S28-T6S-R97W (F28 Pad)	North Reference:	True
Well:	Oxy 28-31D (F28 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		SENW S28-T6S-R97W (F28 Pad)			
Site Position:		Northing:	1,616,975.87 ft	Latitude:	39.495683
From:	Lat/Long	Easting:	2,230,827.80 ft	Longitude:	-108.226036
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.72 °

Well	Oxy 28-31D (F28 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,617,015.83 ft	Latitude:	39.495786
	+E/-W	0.0 ft	Easting:	2,230,746.56 ft	Longitude:	-108.226328
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,293.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	10/22/2009	10.64	65.75	52,395

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	311.18

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
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	
1,954.2	24.81	311.18	1,903.0	232.2	-265.4	1.50	1.50	0.00	311.18	
5,455.5	24.81	311.18	5,081.0	1,199.7	-1,371.3	0.00	0.00	0.00	0.00	
7,109.7	0.00	0.00	6,684.0	1,431.9	-1,636.7	1.50	-1.50	0.00	180.00	Oxy 28-31D (F28 Pad
8,959.7	0.00	0.00	8,534.0	1,431.9	-1,636.7	0.00	0.00	0.00	0.00	Oxy 28-31D (F28 Pad

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site:	SENW S28-T6S-R97W (F28 Pad)	North Reference:	True
Well:	Oxy 28-31D (F28 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	311.18	330.0	0.1	-0.1	0.1	1.50	1.50	
360.0	0.90	311.18	360.0	0.3	-0.4	0.5	1.50	1.50	
390.0	1.35	311.18	390.0	0.7	-0.8	1.1	1.50	1.50	
420.0	1.80	311.18	420.0	1.2	-1.4	1.9	1.50	1.50	
450.0	2.25	311.18	450.0	1.9	-2.2	2.9	1.50	1.50	
480.0	2.70	311.18	479.9	2.8	-3.2	4.2	1.50	1.50	
510.0	3.15	311.18	509.9	3.8	-4.3	5.8	1.50	1.50	
540.0	3.60	311.18	539.8	5.0	-5.7	7.5	1.50	1.50	
570.0	4.05	311.18	569.8	6.3	-7.2	9.5	1.50	1.50	
600.0	4.50	311.18	599.7	7.8	-8.9	11.8	1.50	1.50	
630.0	4.95	311.18	629.6	9.4	-10.7	14.2	1.50	1.50	
660.0	5.40	311.18	659.5	11.2	-12.8	17.0	1.50	1.50	
690.0	5.85	311.18	689.3	13.1	-15.0	19.9	1.50	1.50	
720.0	6.30	311.18	719.2	15.2	-17.4	23.1	1.50	1.50	
750.0	6.75	311.18	749.0	17.4	-19.9	26.5	1.50	1.50	
780.0	7.20	311.18	778.7	19.8	-22.7	30.1	1.50	1.50	
810.0	7.65	311.18	808.5	22.4	-25.6	34.0	1.50	1.50	
840.0	8.10	311.18	838.2	25.1	-28.7	38.1	1.50	1.50	
870.0	8.55	311.18	867.9	28.0	-31.9	42.5	1.50	1.50	
900.0	9.00	311.18	897.5	31.0	-35.4	47.0	1.50	1.50	
930.0	9.45	311.18	927.1	34.1	-39.0	51.8	1.50	1.50	
960.0	9.90	311.18	956.7	37.5	-42.8	56.9	1.50	1.50	
990.0	10.35	311.18	986.3	40.9	-46.8	62.2	1.50	1.50	
1,020.0	10.80	311.18	1,015.7	44.5	-50.9	67.7	1.50	1.50	
1,050.0	11.25	311.18	1,045.2	48.3	-55.2	73.4	1.50	1.50	
1,080.0	11.70	311.18	1,074.6	52.3	-59.7	79.4	1.50	1.50	
1,110.0	12.15	311.18	1,103.9	56.3	-64.4	85.6	1.50	1.50	
1,140.0	12.60	311.18	1,133.2	60.6	-69.2	92.0	1.50	1.50	
1,170.0	13.05	311.18	1,162.5	65.0	-74.2	98.7	1.50	1.50	
1,200.0	13.50	311.18	1,191.7	69.5	-79.4	105.5	1.50	1.50	
1,230.0	13.95	311.18	1,220.8	74.2	-84.8	112.7	1.50	1.50	
1,260.0	14.40	311.18	1,249.9	79.0	-90.3	120.0	1.50	1.50	
1,290.0	14.85	311.18	1,279.0	84.0	-96.0	127.6	1.50	1.50	
1,320.0	15.30	311.18	1,307.9	89.1	-101.9	135.4	1.50	1.50	
1,350.0	15.75	311.18	1,336.8	94.4	-107.9	143.4	1.50	1.50	
1,380.0	16.20	311.18	1,365.7	99.9	-114.1	151.7	1.50	1.50	
1,410.0	16.65	311.18	1,394.4	105.5	-120.5	160.1	1.50	1.50	
1,440.0	17.10	311.18	1,423.2	111.2	-127.1	168.9	1.50	1.50	
1,470.0	17.55	311.18	1,451.8	117.1	-133.8	177.8	1.50	1.50	
1,500.0	18.00	311.18	1,480.4	123.1	-140.7	187.0	1.50	1.50	
1,530.0	18.45	311.18	1,508.9	129.3	-147.8	196.3	1.50	1.50	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site:	SENW S28-T6S-R97W (F28 Pad)	North Reference:	True
Well:	Oxy 28-31D (F28 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
1,560.0	18.90	311.18	1,537.3	135.6	-155.0	205.9	1.50	1.50	
1,590.0	19.35	311.18	1,565.6	142.1	-162.4	215.8	1.50	1.50	
1,620.0	19.80	311.18	1,593.9	148.7	-170.0	225.8	1.50	1.50	
1,650.0	20.25	311.18	1,622.1	155.5	-177.7	236.1	1.50	1.50	
1,680.0	20.70	311.18	1,650.2	162.4	-185.6	246.6	1.50	1.50	
1,710.0	21.15	311.18	1,678.2	169.4	-193.6	257.3	1.50	1.50	
1,740.0	21.60	311.18	1,706.1	176.6	-201.9	268.2	1.50	1.50	
1,770.0	22.05	311.18	1,734.0	184.0	-210.3	279.4	1.50	1.50	
1,800.0	22.50	311.18	1,761.7	191.5	-218.8	290.8	1.50	1.50	
1,830.0	22.95	311.18	1,789.4	199.1	-227.6	302.3	1.50	1.50	
1,860.0	23.40	311.18	1,817.0	206.9	-236.4	314.2	1.50	1.50	
1,890.0	23.85	311.18	1,844.5	214.8	-245.5	326.2	1.50	1.50	
1,920.0	24.30	311.18	1,871.9	222.8	-254.7	338.4	1.50	1.50	
1,950.0	24.75	311.18	1,899.2	231.0	-264.1	350.9	1.50	1.50	
1,954.2	24.81	311.18	1,903.0	232.2	-265.4	352.6	1.50	1.50	EOB; Inc=24.81°
1,980.0	24.81	311.18	1,926.4	239.3	-273.5	363.5	0.00	0.00	
2,010.0	24.81	311.18	1,953.6	247.6	-283.0	376.0	0.00	0.00	
2,040.0	24.81	311.18	1,980.9	255.9	-292.5	388.6	0.00	0.00	
2,070.0	24.81	311.18	2,008.1	264.2	-302.0	401.2	0.00	0.00	
2,100.0	24.81	311.18	2,035.3	272.5	-311.4	413.8	0.00	0.00	
2,130.0	24.81	311.18	2,062.5	280.8	-320.9	426.4	0.00	0.00	
2,160.0	24.81	311.18	2,089.8	289.1	-330.4	439.0	0.00	0.00	
2,190.0	24.81	311.18	2,117.0	297.3	-339.9	451.6	0.00	0.00	
2,220.0	24.81	311.18	2,144.2	305.6	-349.3	464.2	0.00	0.00	
2,250.0	24.81	311.18	2,171.5	313.9	-358.8	476.8	0.00	0.00	
2,280.0	24.81	311.18	2,198.7	322.2	-368.3	489.4	0.00	0.00	
2,310.0	24.81	311.18	2,225.9	330.5	-377.8	501.9	0.00	0.00	
2,340.0	24.81	311.18	2,253.2	338.8	-387.3	514.5	0.00	0.00	
2,370.0	24.81	311.18	2,280.4	347.1	-396.7	527.1	0.00	0.00	
2,400.0	24.81	311.18	2,307.6	355.4	-406.2	539.7	0.00	0.00	
2,430.0	24.81	311.18	2,334.8	363.7	-415.7	552.3	0.00	0.00	
2,460.0	24.81	311.18	2,362.1	372.0	-425.2	564.9	0.00	0.00	
2,484.2	24.81	311.18	2,384.0	378.6	-432.8	575.0	0.00	0.00	Wasatch
2,490.0	24.81	311.18	2,389.3	380.2	-434.6	577.5	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
Oxy 28-31D (F28 Pad) T	0.00	0.00	6,684.0	1,431.9	-1,636.7	1,618,496.19	2,229,153.58	39.499717	-108.232128
- hit/miss target									
- Shape									
- plan misses target center by 4582.1ft at 2490.0ft MD (2389.3 TVD, 380.2 N, -434.6 E)									
- Point									
Oxy 28-31D (F28 Pad) E	0.00	0.00	8,534.0	1,431.9	-1,636.7	1,618,496.19	2,229,153.58	39.499717	-108.232128
- plan misses target center by 6348.9ft at 2490.0ft MD (2389.3 TVD, 380.2 N, -434.6 E)									
- Rectangle (sides W100.0 H200.0 D0.0)									

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site:	SENW S28-T6S-R97W (F28 Pad)	North Reference:	True
Well:	Oxy 28-31D (F28 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	24.81	311.18	2,398.4	383.0	-437.8	581.7	0.00	0.00	
2,600.0	24.81	311.18	2,489.2	410.6	-469.4	623.6	0.00	0.00	
2,700.0	24.81	311.18	2,579.9	438.3	-501.0	665.6	0.00	0.00	
2,800.0	24.81	311.18	2,670.7	465.9	-532.5	707.6	0.00	0.00	
2,900.0	24.81	311.18	2,761.5	493.5	-564.1	749.5	0.00	0.00	
3,000.0	24.81	311.18	2,852.2	521.2	-595.7	791.5	0.00	0.00	
3,100.0	24.81	311.18	2,943.0	548.8	-627.3	833.5	0.00	0.00	
3,200.0	24.81	311.18	3,033.8	576.4	-658.9	875.4	0.00	0.00	
3,300.0	24.81	311.18	3,124.5	604.1	-690.5	917.4	0.00	0.00	
3,400.0	24.81	311.18	3,215.3	631.7	-722.1	959.4	0.00	0.00	
3,500.0	24.81	311.18	3,306.1	659.3	-753.6	1,001.3	0.00	0.00	
3,600.0	24.81	311.18	3,396.8	687.0	-785.2	1,043.3	0.00	0.00	
3,700.0	24.81	311.18	3,487.6	714.6	-816.8	1,085.3	0.00	0.00	
3,800.0	24.81	311.18	3,578.4	742.2	-848.4	1,127.2	0.00	0.00	
3,900.0	24.81	311.18	3,669.1	769.9	-880.0	1,169.2	0.00	0.00	
4,000.0	24.81	311.18	3,759.9	797.5	-911.6	1,211.2	0.00	0.00	
4,100.0	24.81	311.18	3,850.7	825.1	-943.1	1,253.1	0.00	0.00	
4,200.0	24.81	311.18	3,941.4	852.8	-974.7	1,295.1	0.00	0.00	
4,300.0	24.81	311.18	4,032.2	880.4	-1,006.3	1,337.1	0.00	0.00	
4,400.0	24.81	311.18	4,123.0	908.0	-1,037.9	1,379.0	0.00	0.00	
4,500.0	24.81	311.18	4,213.7	935.7	-1,069.5	1,421.0	0.00	0.00	
4,600.0	24.81	311.18	4,304.5	963.3	-1,101.1	1,463.0	0.00	0.00	
4,700.0	24.81	311.18	4,395.3	990.9	-1,132.7	1,504.9	0.00	0.00	
4,797.7	24.81	311.18	4,484.0	1,017.9	-1,163.5	1,546.0	0.00	0.00	Fort Union
4,800.0	24.81	311.18	4,486.0	1,018.6	-1,164.2	1,546.9	0.00	0.00	
4,900.0	24.81	311.18	4,576.8	1,046.2	-1,195.8	1,588.9	0.00	0.00	
5,000.0	24.81	311.18	4,667.6	1,073.8	-1,227.4	1,630.8	0.00	0.00	
5,100.0	24.81	311.18	4,758.3	1,101.5	-1,259.0	1,672.8	0.00	0.00	
5,200.0	24.81	311.18	4,849.1	1,129.1	-1,290.6	1,714.8	0.00	0.00	
5,300.0	24.81	311.18	4,939.9	1,156.7	-1,322.2	1,756.7	0.00	0.00	
5,348.6	24.81	311.18	4,984.0	1,170.2	-1,337.5	1,777.1	0.00	0.00	Base Ft Union
5,400.0	24.81	311.18	5,030.7	1,184.4	-1,353.8	1,798.7	0.00	0.00	
5,455.5	24.81	311.18	5,081.0	1,199.7	-1,371.3	1,822.0	0.00	0.00	Start Drop -1.50
5,500.0	24.15	311.18	5,121.5	1,211.8	-1,385.2	1,840.4	1.50	-1.50	
5,600.0	22.65	311.18	5,213.3	1,238.0	-1,415.0	1,880.2	1.50	-1.50	
5,700.0	21.15	311.18	5,306.1	1,262.5	-1,443.1	1,917.4	1.50	-1.50	
5,800.0	19.65	311.18	5,399.8	1,285.5	-1,469.3	1,952.3	1.50	-1.50	
5,889.0	18.31	311.18	5,484.0	1,304.6	-1,491.1	1,981.2	1.50	-1.50	Ohio Creek
5,900.0	18.15	311.18	5,494.4	1,306.8	-1,493.7	1,984.7	1.50	-1.50	
6,000.0	16.65	311.18	5,589.8	1,326.5	-1,516.2	2,014.6	1.50	-1.50	
6,097.9	15.18	311.18	5,684.0	1,344.2	-1,536.4	2,041.4	1.50	-1.50	Williams Fork
6,100.0	15.15	311.18	5,686.0	1,344.5	-1,536.8	2,042.0	1.50	-1.50	
6,200.0	13.65	311.18	5,782.9	1,360.9	-1,555.5	2,066.8	1.50	-1.50	
6,300.0	12.15	311.18	5,880.4	1,375.6	-1,572.3	2,089.1	1.50	-1.50	
6,400.0	10.65	311.18	5,978.4	1,388.6	-1,587.2	2,108.9	1.50	-1.50	
6,500.0	9.15	311.18	6,076.9	1,399.9	-1,600.1	2,126.1	1.50	-1.50	
6,600.0	7.65	311.18	6,175.8	1,409.5	-1,611.1	2,140.7	1.50	-1.50	
6,700.0	6.15	311.18	6,275.1	1,417.4	-1,620.2	2,152.7	1.50	-1.50	
6,800.0	4.65	311.18	6,374.6	1,423.6	-1,627.2	2,162.1	1.50	-1.50	
6,900.0	3.15	311.18	6,474.4	1,428.1	-1,632.3	2,168.9	1.50	-1.50	
7,000.0	1.65	311.18	6,574.3	1,430.9	-1,635.5	2,173.1	1.50	-1.50	
7,100.0	0.15	311.18	6,674.3	1,431.9	-1,636.7	2,174.6	1.50	-1.50	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site:	SENW S28-T6S-R97W (F28 Pad)	North Reference:	True
Well:	Oxy 28-31D (F28 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
7,109.7	0.00	0.00	6,684.0	1,431.9	-1,636.7	2,174.6	1.50	-1.50	EOD; Inc=0° - Approx TOG - Oxy 28-31D (F28
7,200.0	0.00	0.00	6,774.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
7,300.0	0.00	0.00	6,874.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
7,400.0	0.00	0.00	6,974.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
7,500.0	0.00	0.00	7,074.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
7,600.0	0.00	0.00	7,174.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
7,700.0	0.00	0.00	7,274.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
7,800.0	0.00	0.00	7,374.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
7,900.0	0.00	0.00	7,474.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,000.0	0.00	0.00	7,574.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,100.0	0.00	0.00	7,674.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,200.0	0.00	0.00	7,774.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,300.0	0.00	0.00	7,874.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,400.0	0.00	0.00	7,974.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,459.7	0.00	0.00	8,034.0	1,431.9	-1,636.7	2,174.6	0.00	0.00	Cameo
8,500.0	0.00	0.00	8,074.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,600.0	0.00	0.00	8,174.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,700.0	0.00	0.00	8,274.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,800.0	0.00	0.00	8,374.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,809.7	0.00	0.00	8,384.0	1,431.9	-1,636.7	2,174.6	0.00	0.00	Rollins SS
8,900.0	0.00	0.00	8,474.3	1,431.9	-1,636.7	2,174.6	0.00	0.00	
8,959.7	0.00	0.00	8,534.0	1,431.9	-1,636.7	2,174.6	0.00	0.00	TD at 8959.7 - Oxy 28-31D (F28 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 28-31D (F28 Pad) T - plan hits target center - Point	0.00	0.00	6,684.0	1,431.9	-1,636.7	1,618,496.19	2,229,153.58	39.499717	-108.232128
Oxy 28-31D (F28 Pad) E - plan hits target center - Rectangle (sides W100.0 H200.0 D0.0)	0.00	0.00	8,534.0	1,431.9	-1,636.7	1,618,496.19	2,229,153.58	39.499717	-108.232128

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,484.2	2,384.0	Wasatch		0.00	
4,797.7	4,484.0	Fort Union		0.00	
5,348.6	4,984.0	Base Ft Union		0.00	
5,889.0	5,484.0	Ohio Creek		0.00	
6,097.9	5,684.0	Williams Fork		0.00	
7,109.7	6,684.0	Approx TOG		0.00	
8,459.7	8,034.0	Cameo		0.00	
8,809.7	8,384.0	Rollins SS		0.00	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site:	SENW S28-T6S-R97W (F28 Pad)	North Reference:	True
Well:	Oxy 28-31D (F28 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'
1,954.2	1,903.0	232.2	-265.4	EOB; Inc=24.81°
5,455.5	5,081.0	1,199.7	-1,371.3	Start Drop -1.50
7,109.7	6,684.0	1,431.9	-1,636.7	EOD; Inc=0°
8,959.7	8,534.0	1,431.9	-1,636.7	TD at 8959.7

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User 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:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 200.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	10/26/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	8,959.7	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
SENW S28-T6S-R97W (F28 Pad)						
687-28A-18 (Marathon offset) - DD - Plan #1						Out of range
Oxy 28-15D (F28 Pad) - DD - Plan #1	300.0	300.0	90.5	89.5	91.009	CC, ES
Oxy 28-15D (F28 Pad) - DD - Plan #1	700.0	693.8	115.5	113.1	48.558	SF
Oxy 28-17D (F28 Pad) - DD - Plan #1	300.0	300.0	75.3	74.3	75.703	CC, ES
Oxy 28-17D (F28 Pad) - DD - Plan #1	800.0	798.5	107.2	104.5	39.187	SF
Oxy 28-18D (F28 pad) - DD - Plan #1	300.0	300.0	60.4	59.4	60.745	CC, ES
Oxy 28-18D (F28 pad) - DD - Plan #1	800.0	800.6	90.4	87.6	33.005	SF
Oxy 28-19D (F28 Pad) - DD - Plan #1	300.0	300.0	30.0	29.0	30.162	CC, ES
Oxy 28-19D (F28 Pad) - DD - Plan #1	600.0	599.7	41.2	39.2	20.186	SF
Oxy 28-20D (F28 Pad) - DD - Plan #1	300.0	300.0	44.7	43.7	44.882	CC, ES
Oxy 28-20D (F28 Pad) - DD - Plan #1	900.0	903.1	73.5	70.3	23.390	SF
Oxy 28-21D (F28 Pad) - DD - Plan #1	300.0	300.0	59.7	58.7	59.960	CC, ES
Oxy 28-21D (F28 Pad) - DD - Plan #1	1,100.0	1,104.1	101.6	97.4	24.039	SF
Oxy 28-22D (F28 Pad) - DD - Plan #1	300.0	300.0	105.1	104.1	105.648	CC, ES
Oxy 28-22D (F28 Pad) - DD - Plan #1	1,300.0	1,309.4	184.7	179.4	35.105	SF
Oxy 28-23D (F28 Pad) - DD - Plan #1	300.0	300.0	74.3	73.3	74.688	CC, ES
Oxy 28-23D (F28 Pad) - DD - Plan #1	1,600.0	1,607.2	199.0	191.3	25.936	SF
Oxy 28-24D (F28 Pad) - DD - Plan #1	300.0	300.0	90.1	89.1	90.571	CC, ES
Oxy 28-24D (F28 Pad) - DD - Plan #1	1,500.0	1,502.7	189.5	181.3	23.225	SF
Oxy 28-25D (F28 Pad) - DD - Plan #1	300.0	300.0	46.2	45.2	46.438	CC, ES
Oxy 28-25D (F28 Pad) - DD - Plan #1	900.0	902.2	77.1	73.8	23.860	SF
Oxy 28-26D (F28 Pad) - DD - Plan #1	300.0	300.0	31.7	30.7	31.842	CC, ES
Oxy 28-26D (F28 Pad) - DD - Plan #1	800.0	802.0	51.3	48.5	18.315	SF
Oxy 28-27D (F28 Pad) - DD - Plan #1	300.0	300.0	18.0	17.0	18.063	CC, ES
Oxy 28-27D (F28 Pad) - DD - Plan #1	700.0	701.0	30.5	28.1	12.620	SF
Oxy 28-28D (F28 Pad) - DD - Plan #1	300.0	300.0	10.9	9.9	10.994	CC, ES
Oxy 28-28D (F28 Pad) - DD - Plan #1	500.0	500.0	13.3	11.6	7.830	SF
Oxy 28-29D (F28 Pad) - DD - Plan #1	544.6	544.2	17.1	15.2	9.144	CC
Oxy 28-29D (F28 Pad) - DD - Plan #1	600.0	599.4	17.3	15.2	8.288	ES
Oxy 28-29D (F28 Pad) - DD - Plan #1	1,000.0	998.9	27.4	23.4	6.733	SF
Oxy 28-30D (F28 Pad) - DD - Plan #1	200.0	200.0	15.5	14.8	23.978	CC, ES
Oxy 28-30D (F28 Pad) - DD - Plan #1	2,500.0	2,485.2	76.8	53.8	3.337	SF
Oxy 28-32D (F28 Pad) - DD - Plan #1	639.6	640.5	9.0	6.7	3.842	CC
Oxy 28-32D (F28 Pad) - DD - Plan #1	700.0	700.9	9.2	6.6	3.476	ES
Oxy 28-32D (F28 Pad) - DD - Plan #1	800.0	800.8	10.5	7.2	3.263	SF

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-15D (F28 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 (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	114.48	-37.5	82.4	90.5				
100.0	100.0	100.0	100.0	0.1	0.1	114.48	-37.5	82.4	90.5	90.2	0.30	305.149	
200.0	200.0	200.0	200.0	0.3	0.3	114.48	-37.5	82.4	90.5	89.9	0.65	140.204	
300.0	300.0	300.0	300.0	0.5	0.5	114.48	-37.5	82.4	90.5	89.5	0.99	91.009 CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	163.52	-37.5	82.4	91.8	90.5	1.34	68.312	
500.0	499.9	499.9	499.9	0.9	0.8	164.18	-37.5	82.4	95.6	93.9	1.69	56.466	
600.0	599.7	597.2	597.2	1.1	1.0	165.38	-38.4	83.2	103.1	101.0	2.04	50.604	
700.0	699.3	693.8	693.7	1.3	1.2	167.10	-41.1	85.7	115.5	113.1	2.38	48.558 SF	
800.0	798.6	789.2	789.0	1.5	1.4	169.01	-45.6	89.8	133.0	130.3	2.72	48.925	
900.0	897.5	883.2	882.5	1.8	1.6	170.85	-51.7	95.4	155.4	152.4	3.05	50.928	
1,000.0	996.1	975.2	974.0	2.1	1.8	172.49	-59.3	102.4	182.8	179.4	3.38	54.095	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-17D (F28 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	116.42	-33.5	67.4	75.3					
100.0	100.0	100.0	100.0	0.1	0.1	116.42	-33.5	67.4	75.3	75.0	0.30	253.827		
200.0	200.0	200.0	200.0	0.3	0.3	116.42	-33.5	67.4	75.3	74.7	0.65	116.624		
300.0	300.0	300.0	300.0	0.5	0.5	116.42	-33.5	67.4	75.3	74.3	0.99	75.703 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	165.48	-33.5	67.4	76.6	75.2	1.34	56.990		
500.0	499.9	499.9	499.9	0.9	0.8	166.17	-33.5	67.4	80.4	78.7	1.69	47.503		
600.0	599.7	599.7	599.7	1.1	1.0	167.18	-33.5	67.4	86.8	84.7	2.04	42.521		
700.0	699.3	699.4	699.4	1.3	1.2	169.15	-34.6	66.8	95.6	93.3	2.39	40.057		
800.0	798.6	798.5	798.5	1.5	1.4	172.38	-37.9	64.7	107.2	104.5	2.74	39.187 SF		
900.0	897.5	897.0	896.7	1.8	1.6	176.29	-43.2	61.3	121.9	118.8	3.09	39.434		
1,000.0	996.1	994.8	994.1	2.1	1.8	-179.74	-50.4	56.7	139.9	136.4	3.45	40.521		
1,100.0	1,094.2	1,092.2	1,091.1	2.5	2.0	-176.60	-57.8	52.0	161.0	157.2	3.82	42.163		
1,200.0	1,191.7	1,189.0	1,187.6	2.9	2.2	-174.26	-65.2	47.3	185.0	180.8	4.19	44.163		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-18D (F28 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	118.04	-28.4	53.3	60.4				
100.0	100.0	100.0	100.0	0.1	0.1	118.04	-28.4	53.3	60.4	60.1	0.30	203.673	
200.0	200.0	200.0	200.0	0.3	0.3	118.04	-28.4	53.3	60.4	59.8	0.65	93.580	
300.0	300.0	300.0	300.0	0.5	0.5	118.04	-28.4	53.3	60.4	59.4	0.99	60.745 CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	167.13	-28.4	53.3	61.7	60.4	1.34	45.923	
500.0	499.9	499.9	499.9	0.9	0.8	167.89	-28.4	53.3	65.5	63.8	1.69	38.734	
600.0	599.7	599.7	599.7	1.1	1.0	168.96	-28.4	53.3	71.9	69.9	2.04	35.274	
700.0	699.3	700.2	700.2	1.3	1.2	171.02	-29.1	52.2	80.4	78.0	2.39	33.649	
800.0	798.6	800.6	800.5	1.5	1.4	174.42	-31.1	48.8	90.4	87.6	2.74	33.005 SF	
900.0	897.5	900.2	899.9	1.8	1.6	178.51	-34.4	43.3	102.3	99.3	3.09	33.105	
1,000.0	996.1	998.9	998.4	2.1	1.8	-178.02	-38.0	37.3	117.2	113.7	3.45	33.967	
1,100.0	1,094.2	1,097.2	1,096.4	2.5	2.0	-175.41	-41.5	31.4	134.9	131.1	3.81	35.386	
1,200.0	1,191.7	1,194.9	1,193.9	2.9	2.2	-173.50	-45.1	25.5	155.4	151.2	4.18	37.187	
1,300.0	1,288.6	1,292.2	1,290.9	3.4	2.4	-172.13	-48.6	19.6	178.5	173.9	4.55	39.259	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												SENW S28-T6S-R97W (F28 Pad) - Oxy 28-19D (F28 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	109.87	-10.2	28.2	30.0								
100.0	100.0	100.0	100.0	0.1	0.1	109.87	-10.2	28.2	30.0	29.7	0.30	101.132					
200.0	200.0	200.0	200.0	0.3	0.3	109.87	-10.2	28.2	30.0	29.4	0.65	46.466					
300.0	300.0	300.0	300.0	0.5	0.5	109.87	-10.2	28.2	30.0	29.0	0.99	30.162 CC, ES					
400.0	400.0	400.0	400.0	0.7	0.7	159.55	-10.2	28.2	31.2	29.9	1.34	23.239					
500.0	499.9	499.9	499.9	0.9	0.8	161.79	-10.2	28.2	34.9	33.2	1.69	20.638					
600.0	599.7	599.7	599.7	1.1	1.0	164.61	-10.2	28.2	41.2	39.2	2.04	20.186 SF					
700.0	699.3	700.5	700.5	1.3	1.2	166.86	-9.2	27.3	48.9	46.5	2.39	20.437					
800.0	798.6	801.5	801.4	1.5	1.4	168.18	-6.2	24.7	56.6	53.9	2.74	20.664					
900.0	897.5	902.2	901.9	1.8	1.6	168.91	-1.4	20.4	64.6	61.5	3.09	20.897					
1,000.0	996.1	1,001.7	1,001.2	2.1	1.8	169.69	3.9	15.6	74.5	71.1	3.44	21.671					
1,100.0	1,094.2	1,100.9	1,100.1	2.5	2.0	170.56	9.2	10.9	87.0	83.2	3.78	23.000					
1,200.0	1,191.7	1,199.8	1,198.7	2.9	2.2	171.43	14.5	6.3	102.1	98.0	4.12	24.754					
1,300.0	1,288.6	1,298.2	1,296.9	3.4	2.4	172.24	19.7	1.6	119.7	115.3	4.46	26.839					
1,400.0	1,384.9	1,396.1	1,394.5	3.9	2.6	172.96	24.9	-3.0	139.9	135.2	4.79	29.193					
1,500.0	1,480.4	1,493.4	1,491.6	4.4	2.8	173.60	30.1	-7.7	162.7	157.6	5.12	31.767					
1,600.0	1,575.0	1,590.2	1,588.1	5.0	3.0	174.16	35.2	-12.2	188.0	182.6	5.45	34.526					

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-20D (F28 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	108.55	-14.2	42.3	44.7					
100.0	100.0	100.0	100.0	0.1	0.1	108.55	-14.2	42.3	44.7	44.4	0.30	150.486		
200.0	200.0	200.0	200.0	0.3	0.3	108.55	-14.2	42.3	44.7	44.0	0.65	69.142		
300.0	300.0	300.0	300.0	0.5	0.5	108.55	-14.2	42.3	44.7	43.7	0.99	44.882 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	157.99	-14.2	42.3	45.9	44.5	1.34	34.126		
500.0	499.9	499.9	499.9	0.9	0.8	159.67	-14.2	42.3	49.5	47.8	1.69	29.252		
600.0	599.7	600.8	600.8	1.1	1.0	161.12	-13.0	41.7	54.7	52.6	2.04	26.748		
700.0	699.3	701.8	701.7	1.3	1.2	161.48	-9.5	39.9	60.3	57.9	2.40	25.135		
800.0	798.6	802.9	802.6	1.5	1.4	161.01	-3.5	36.8	66.5	63.7	2.77	24.025		
900.0	897.5	903.1	902.4	1.8	1.6	160.23	4.2	32.8	73.5	70.3	3.14	23.390 SF		
1,000.0	996.1	1,002.7	1,001.6	2.1	1.8	160.13	12.0	28.8	82.8	79.3	3.52	23.526		
1,100.0	1,094.2	1,102.0	1,100.5	2.5	2.0	160.57	19.8	24.8	94.6	90.7	3.90	24.255		
1,200.0	1,191.7	1,200.9	1,199.1	2.9	2.3	161.35	27.5	20.8	108.9	104.6	4.28	25.440		
1,300.0	1,288.6	1,299.5	1,297.2	3.4	2.5	162.29	35.3	16.8	125.7	121.0	4.66	26.987		
1,400.0	1,384.9	1,397.6	1,395.0	3.9	2.7	163.29	42.9	12.8	144.9	139.9	5.03	28.830		
1,500.0	1,480.4	1,495.1	1,492.1	4.4	2.9	164.28	50.6	8.9	166.7	161.3	5.39	30.918		
1,600.0	1,575.0	1,592.1	1,588.7	5.0	3.1	165.23	58.2	5.0	190.9	185.2	5.75	33.213		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-21D (F28 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	108.88	-19.3	56.4	59.7					
100.0	100.0	100.0	100.0	0.1	0.1	108.88	-19.3	56.4	59.7	59.4	0.30	201.042		
200.0	200.0	200.0	200.0	0.3	0.3	108.88	-19.3	56.4	59.7	59.0	0.65	92.371		
300.0	300.0	300.0	300.0	0.5	0.5	108.88	-19.3	56.4	59.7	58.7	0.99	59.960 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	158.16	-19.3	56.4	60.9	59.5	1.34	45.290		
500.0	499.9	501.0	501.0	0.9	0.8	158.53	-18.0	56.0	63.7	62.0	1.70	37.562		
600.0	599.7	602.0	601.9	1.1	1.0	157.89	-14.2	54.7	67.3	65.3	2.05	32.783		
700.0	699.3	702.9	702.6	1.3	1.2	156.42	-7.9	52.6	71.8	69.4	2.43	29.598		
800.0	798.6	803.9	803.1	1.5	1.5	154.32	0.9	49.7	77.2	74.4	2.82	27.337		
900.0	897.5	904.8	903.3	1.8	1.7	151.77	12.3	45.9	83.6	80.3	3.26	25.635		
1,000.0	996.1	1,004.7	1,002.3	2.1	2.0	149.40	25.3	41.5	91.4	87.7	3.73	24.496		
1,100.0	1,094.2	1,104.1	1,100.8	2.5	2.2	148.14	38.3	37.2	101.6	97.4	4.23	24.039 SF		
1,200.0	1,191.7	1,203.4	1,199.1	2.9	2.5	147.80	51.2	32.8	114.0	109.2	4.73	24.085		
1,300.0	1,288.6	1,302.3	1,297.0	3.4	2.8	148.11	64.2	28.5	128.6	123.3	5.24	24.520		
1,400.0	1,384.9	1,400.8	1,394.7	3.9	3.1	148.87	77.1	24.2	145.4	139.6	5.75	25.270		
1,500.0	1,480.4	1,499.0	1,491.8	4.4	3.4	149.90	89.9	19.9	164.4	158.1	6.26	26.283		
1,600.0	1,575.0	1,596.6	1,588.5	5.0	3.6	151.07	102.6	15.6	185.7	179.0	6.75	27.521		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												SENW S28-T6S-R97W (F28 Pad) - Oxy 28-22D (F28 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	108.59	-33.5	99.6	105.1							
100.0	100.0	100.0	100.0	0.1	0.1	108.59	-33.5	99.6	105.1	104.8	0.30	354.231				
200.0	200.0	200.0	200.0	0.3	0.3	108.59	-33.5	99.6	105.1	104.5	0.65	162.755				
300.0	300.0	300.0	300.0	0.5	0.5	108.59	-33.5	99.6	105.1	104.1	0.99	105.648	CC, ES			
400.0	400.0	400.0	400.0	0.7	0.7	157.67	-33.5	99.6	106.3	105.0	1.34	79.109				
500.0	499.9	499.9	499.9	0.9	0.8	158.43	-33.5	99.6	110.0	108.3	1.69	64.939				
600.0	599.7	601.3	601.3	1.1	1.0	159.04	-32.2	99.4	115.4	113.3	2.05	56.357				
700.0	699.3	702.8	702.7	1.3	1.2	158.96	-28.2	98.6	121.8	119.4	2.41	50.598				
800.0	798.6	804.2	803.9	1.5	1.4	158.27	-21.6	97.2	129.3	126.6	2.78	46.478				
900.0	897.5	905.6	904.8	1.8	1.6	157.11	-12.4	95.4	138.0	134.8	3.18	43.350				
1,000.0	996.1	1,006.9	1,005.4	2.1	1.9	155.57	-0.6	93.0	147.7	144.1	3.62	40.832				
1,100.0	1,094.2	1,108.1	1,105.5	2.5	2.1	153.76	13.8	90.0	158.7	154.6	4.10	38.690				
1,200.0	1,191.7	1,209.1	1,205.0	2.9	2.5	151.76	30.8	86.6	171.0	166.4	4.65	36.789				
1,300.0	1,288.6	1,309.4	1,303.4	3.4	2.8	149.69	50.2	82.7	184.7	179.4	5.26	35.105	SF			

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design		SENW S28-T6S-R97W (F28 Pad) - Oxy 28-23D (F28 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	108.28	-23.3	70.6	74.3						
100.0	100.0	100.0	100.0	0.1	0.1	108.28	-23.3	70.6	74.3	74.0	0.30	250.423			
200.0	200.0	200.0	200.0	0.3	0.3	108.28	-23.3	70.6	74.3	73.7	0.65	115.059			
300.0	300.0	300.0	300.0	0.5	0.5	108.28	-23.3	70.6	74.3	73.3	0.99	74.688	CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	157.48	-23.3	70.6	75.5	74.2	1.34	56.188			
500.0	499.9	499.9	499.9	0.9	0.8	158.55	-23.3	70.6	79.2	77.5	1.69	46.747			
600.0	599.7	601.0	601.0	1.1	1.0	159.41	-22.0	70.2	84.5	82.5	2.05	41.308			
700.0	699.3	702.1	702.0	1.3	1.2	159.34	-18.1	69.3	90.9	88.5	2.41	37.769			
800.0	798.6	803.2	802.9	1.5	1.4	158.52	-11.6	67.7	98.2	95.4	2.78	35.320			
900.0	897.5	904.3	903.5	1.8	1.6	157.14	-2.5	65.5	106.5	103.3	3.18	33.514			
1,000.0	996.1	1,005.3	1,003.8	2.1	1.9	155.33	9.1	62.7	115.9	112.2	3.61	32.081			
1,100.0	1,094.2	1,106.2	1,103.7	2.5	2.1	153.25	23.3	59.2	126.4	122.3	4.10	30.854			
1,200.0	1,191.7	1,207.0	1,203.0	2.9	2.5	151.01	40.1	55.1	138.2	133.5	4.65	29.737			
1,300.0	1,288.6	1,307.7	1,301.7	3.4	2.8	148.69	59.3	50.4	151.3	146.0	5.27	28.680			
1,400.0	1,384.9	1,408.1	1,399.5	3.9	3.2	146.37	81.1	45.1	165.7	159.7	5.99	27.672			
1,500.0	1,480.4	1,508.2	1,496.6	4.4	3.6	144.08	105.2	39.2	181.6	174.8	6.79	26.720			
1,600.0	1,575.0	1,607.2	1,591.9	5.0	4.1	142.01	131.1	32.9	199.0	191.3	7.67	25.936	SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-24D (F28 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	108.38	-28.4	85.5	90.1				
100.0	100.0	100.0	100.0	0.1	0.1	108.38	-28.4	85.5	90.1	89.8	0.30	303.679	
200.0	200.0	200.0	200.0	0.3	0.3	108.38	-28.4	85.5	90.1	89.5	0.65	139.528	
300.0	300.0	300.0	300.0	0.5	0.5	108.38	-28.4	85.5	90.1	89.1	0.99	90.571	CC, ES
400.0	400.0	401.2	401.2	0.7	0.7	156.79	-27.1	85.2	90.6	89.3	1.35	67.276	
500.0	499.9	502.4	502.3	0.9	0.9	155.59	-23.2	84.4	92.3	90.6	1.71	54.058	
600.0	599.7	603.4	603.1	1.1	1.1	153.69	-16.6	83.0	95.1	93.0	2.08	45.645	
700.0	699.3	704.4	703.6	1.3	1.3	151.22	-7.5	81.0	99.2	96.7	2.49	39.869	
800.0	798.6	805.2	803.7	1.5	1.5	148.33	4.2	78.5	104.7	101.7	2.93	35.674	
900.0	897.5	905.8	903.2	1.8	1.8	145.19	18.4	75.4	111.7	108.2	3.44	32.492	
1,000.0	996.1	1,006.1	1,002.1	2.1	2.2	141.97	35.2	71.8	120.3	116.3	4.01	30.003	
1,100.0	1,094.2	1,106.1	1,100.2	2.5	2.5	138.78	54.4	67.7	130.6	126.0	4.66	28.016	
1,200.0	1,191.7	1,205.8	1,197.4	2.9	2.9	135.74	76.1	63.0	142.7	137.3	5.40	26.415	
1,300.0	1,288.6	1,305.2	1,293.6	3.4	3.4	132.88	100.1	57.8	156.5	150.3	6.23	25.120	
1,400.0	1,384.9	1,404.2	1,388.9	3.9	3.9	130.26	126.5	52.2	172.1	165.0	7.15	24.072	
1,500.0	1,480.4	1,502.7	1,482.9	4.4	4.4	127.86	155.2	46.0	189.5	181.3	8.16	23.225	SF

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-25D (F28 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	121.89	-24.4	39.2	46.2					
100.0	100.0	100.0	100.0	0.1	0.1	121.89	-24.4	39.2	46.2	45.9	0.30	155.702		
200.0	200.0	200.0	200.0	0.3	0.3	121.89	-24.4	39.2	46.2	45.6	0.65	71.539		
300.0	300.0	300.0	300.0	0.5	0.5	121.89	-24.4	39.2	46.2	45.2	0.99	46.438	CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	170.96	-24.4	39.2	47.5	46.1	1.34	35.344		
500.0	499.9	500.8	500.8	0.9	0.8	172.77	-24.8	37.9	50.5	48.8	1.69	29.810		
600.0	599.7	601.5	601.4	1.1	1.0	176.81	-25.8	34.1	54.5	52.5	2.05	26.632		
700.0	699.3	702.0	701.7	1.3	1.2	-177.63	-27.5	27.7	60.0	57.6	2.41	24.879		
800.0	798.6	802.3	801.6	1.5	1.5	-171.29	-30.0	18.8	67.4	64.6	2.80	24.065		
900.0	897.5	902.2	900.8	1.8	1.7	-164.87	-33.1	7.4	77.1	73.8	3.23	23.860	SF	
1,000.0	996.1	1,001.7	999.2	2.1	2.0	-158.86	-36.8	-6.4	89.3	85.6	3.72	24.016		
1,100.0	1,094.2	1,100.6	1,096.7	2.5	2.3	-153.50	-41.2	-22.6	104.3	100.0	4.28	24.359		
1,200.0	1,191.7	1,198.9	1,193.1	2.9	2.6	-148.88	-46.2	-41.1	121.9	117.0	4.92	24.779		
1,300.0	1,288.6	1,296.5	1,288.3	3.4	3.0	-144.95	-51.9	-61.8	142.2	136.6	5.64	25.216		
1,400.0	1,384.9	1,393.4	1,382.2	3.9	3.5	-141.61	-58.1	-84.7	165.2	158.7	6.44	25.643		
1,500.0	1,480.4	1,489.4	1,474.7	4.4	3.9	-138.78	-64.9	-109.7	190.6	183.3	7.32	26.047		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-26D (F28 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	127.55	-19.3	25.1	31.7					
100.0	100.0	100.0	100.0	0.1	0.1	127.55	-19.3	25.1	31.7	31.4	0.30	106.765		
200.0	200.0	200.0	200.0	0.3	0.3	127.55	-19.3	25.1	31.7	31.0	0.65	49.054		
300.0	300.0	300.0	300.0	0.5	0.5	127.55	-19.3	25.1	31.7	30.7	0.99	31.842 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	176.51	-19.3	25.1	33.0	31.6	1.34	24.549		
500.0	499.9	500.6	500.6	0.9	0.8	178.31	-19.4	23.8	35.9	34.3	1.69	21.228		
600.0	599.7	601.2	601.1	1.1	1.0	-177.42	-19.7	19.8	39.8	37.7	2.05	19.430		
700.0	699.3	701.7	701.3	1.3	1.2	-171.60	-20.3	13.2	44.8	42.4	2.41	18.567		
800.0	798.6	802.0	801.2	1.5	1.4	-165.13	-21.0	4.1	51.3	48.5	2.80	18.315 SF		
900.0	897.5	902.1	900.6	1.8	1.7	-158.71	-22.0	-7.7	59.8	56.5	3.24	18.436		
1,000.0	996.1	1,001.9	999.4	2.1	2.0	-152.82	-23.1	-22.1	70.3	66.6	3.75	18.751		
1,100.0	1,094.2	1,101.3	1,097.4	2.5	2.3	-147.64	-24.5	-38.9	83.0	78.7	4.34	19.139		
1,200.0	1,191.7	1,200.4	1,194.6	2.9	2.7	-143.20	-26.0	-58.2	97.9	92.9	5.01	19.538		
1,300.0	1,288.6	1,299.0	1,290.8	3.4	3.1	-139.45	-27.8	-79.9	114.9	109.1	5.77	19.914		
1,400.0	1,384.9	1,397.1	1,385.9	3.9	3.5	-136.28	-29.7	-103.9	134.1	127.4	6.62	20.258		
1,500.0	1,480.4	1,494.7	1,479.8	4.4	4.0	-133.58	-31.8	-130.2	155.3	147.7	7.55	20.566		
1,600.0	1,575.0	1,591.7	1,572.5	5.0	4.5	-131.32	-34.1	-158.6	178.5	169.9	8.55	20.875		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-27D (F28 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	142.23	-14.2	11.0	18.0					
100.0	100.0	100.0	100.0	0.1	0.1	142.23	-14.2	11.0	18.0	17.7	0.30	60.565		
200.0	200.0	200.0	200.0	0.3	0.3	142.23	-14.2	11.0	18.0	17.3	0.65	27.827		
300.0	300.0	300.0	300.0	0.5	0.5	142.23	-14.2	11.0	18.0	17.0	0.99	18.063 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-169.69	-14.2	11.0	19.3	17.9	1.34	14.331		
500.0	499.9	500.3	500.3	0.9	0.8	-169.12	-14.0	9.7	22.2	20.5	1.69	13.100		
600.0	599.7	600.7	600.6	1.1	1.0	-165.65	-13.6	5.8	25.9	23.8	2.05	12.634		
700.0	699.3	701.0	700.7	1.3	1.2	-160.63	-12.8	-0.8	30.5	28.1	2.42	12.620 SF		
800.0	798.6	801.3	800.5	1.5	1.4	-155.07	-11.6	-9.9	36.3	33.5	2.82	12.879		
900.0	897.5	901.4	900.0	1.8	1.7	-149.64	-10.2	-21.6	43.5	40.2	3.28	13.275		
1,000.0	996.1	1,001.5	999.0	2.1	2.0	-144.67	-8.4	-35.9	52.1	48.3	3.80	13.707		
1,100.0	1,094.2	1,101.3	1,097.4	2.5	2.3	-140.31	-6.4	-52.7	62.3	57.8	4.41	14.118		
1,200.0	1,191.7	1,201.0	1,195.2	2.9	2.7	-136.55	-4.0	-72.1	73.9	68.8	5.11	14.481		
1,300.0	1,288.6	1,300.5	1,292.1	3.4	3.1	-133.33	-1.3	-93.9	87.2	81.3	5.90	14.791		
1,400.0	1,384.9	1,399.6	1,388.3	3.9	3.5	-130.58	1.6	-118.1	102.0	95.2	6.78	15.050		
1,500.0	1,480.4	1,498.5	1,483.4	4.4	4.0	-128.21	4.9	-144.7	118.3	110.5	7.75	15.266		
1,600.0	1,575.0	1,597.0	1,577.6	5.0	4.5	-126.37	8.4	-173.2	136.1	127.3	8.78	15.503		
1,700.0	1,668.9	1,695.0	1,671.4	5.6	5.0	-125.61	11.9	-201.7	155.5	145.7	9.83	15.828		
1,800.0	1,761.7	1,792.8	1,764.9	6.3	5.6	-125.66	15.4	-230.2	176.4	165.5	10.88	16.217		
1,900.0	1,853.6	1,890.2	1,858.0	7.1	6.1	-126.24	18.9	-258.5	198.8	186.9	11.93	16.663		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-28D (F28 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	-158.82	-10.2	-4.0	10.9					
100.0	100.0	100.0	100.0	0.1	0.1	-158.82	-10.2	-4.0	10.9	10.6	0.30	36.862		
200.0	200.0	200.0	200.0	0.3	0.3	-158.82	-10.2	-4.0	10.9	10.3	0.65	16.937		
300.0	300.0	300.0	300.0	0.5	0.5	-158.82	-10.2	-4.0	10.9	9.9	0.99	10.994 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-116.16	-10.2	-4.0	11.5	10.1	1.35	8.513		
500.0	499.9	500.0	500.0	0.9	0.8	-125.72	-9.8	-5.2	13.3	11.6	1.70	7.830 SF		
600.0	599.7	600.0	599.9	1.1	1.0	-130.83	-8.7	-9.0	16.4	14.3	2.07	7.926		
700.0	699.3	700.1	699.8	1.3	1.2	-132.65	-6.7	-15.2	20.5	18.0	2.46	8.327		
800.0	798.6	800.2	799.4	1.5	1.4	-132.55	-4.0	-24.0	25.5	22.7	2.89	8.831		
900.0	897.5	900.2	898.8	1.8	1.7	-131.46	-0.5	-35.2	31.5	28.1	3.38	9.339		
1,000.0	996.1	1,000.2	997.8	2.1	2.0	-129.90	3.7	-48.9	38.5	34.5	3.92	9.800		
1,100.0	1,094.2	1,100.2	1,096.3	2.5	2.3	-128.19	8.7	-65.1	46.4	41.8	4.55	10.192		
1,200.0	1,191.7	1,200.1	1,194.3	2.9	2.6	-126.47	14.5	-83.7	55.2	50.0	5.26	10.510		
1,300.0	1,288.6	1,299.9	1,291.6	3.4	3.1	-124.82	21.0	-104.8	65.1	59.1	6.05	10.760		
1,400.0	1,384.9	1,399.7	1,388.3	3.9	3.5	-123.27	28.2	-128.2	76.1	69.1	6.94	10.952		
1,500.0	1,480.4	1,499.3	1,484.2	4.4	4.0	-121.83	36.2	-154.0	88.0	80.0	7.93	11.096		
1,600.0	1,575.0	1,598.8	1,579.2	5.0	4.5	-120.51	44.9	-182.2	100.9	91.9	9.01	11.204		
1,700.0	1,668.9	1,698.0	1,673.2	5.6	5.1	-119.49	54.2	-212.3	114.9	104.7	10.15	11.320		
1,800.0	1,761.7	1,796.8	1,766.9	6.3	5.7	-119.53	63.6	-242.5	130.1	118.8	11.30	11.520		
1,900.0	1,853.6	1,895.4	1,860.3	7.1	6.3	-120.41	72.9	-272.6	146.7	134.3	12.44	11.795		
2,000.0	1,944.5	1,993.7	1,953.4	7.8	6.8	-121.86	82.2	-302.6	164.5	150.9	13.55	12.139		
2,100.0	2,035.3	2,091.9	2,046.5	8.6	7.4	-123.24	91.5	-332.6	182.6	167.9	14.65	12.459		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-29D (F28 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	-105.77	-5.1	-18.1	18.8					
100.0	100.0	100.0	100.0	0.1	0.1	-105.77	-5.1	-18.1	18.8	18.5	0.30	63.251		
200.0	200.0	200.0	200.0	0.3	0.3	-105.77	-5.1	-18.1	18.8	18.1	0.65	29.061		
300.0	300.0	300.0	300.0	0.5	0.5	-105.77	-5.1	-18.1	18.8	17.8	0.99	18.864		
400.0	400.0	400.0	400.0	0.7	0.7	-60.43	-5.1	-18.1	18.1	16.7	1.34	13.447		
500.0	499.9	499.7	499.7	0.9	0.8	-68.62	-4.5	-19.2	17.2	15.5	1.70	10.105		
544.6	544.5	544.2	544.1	0.9	0.9	-72.77	-3.8	-20.5	17.1	15.2	1.87	9.144 CC		
600.0	599.7	599.4	599.3	1.1	1.0	-78.13	-2.6	-22.6	17.3	15.2	2.08	8.288 ES		
700.0	699.3	699.2	698.9	1.3	1.2	-87.63	0.4	-28.4	18.4	15.9	2.50	7.340		
800.0	798.6	799.0	798.3	1.5	1.4	-95.87	4.8	-36.4	20.5	17.5	2.97	6.901		
900.0	897.5	898.9	897.5	1.8	1.7	-102.29	10.3	-46.7	23.6	20.1	3.49	6.746		
1,000.0	996.1	998.9	996.4	2.1	2.0	-106.95	17.1	-59.3	27.4	23.4	4.07	6.733 SF		
1,100.0	1,094.2	1,098.8	1,094.9	2.5	2.3	-110.17	25.1	-74.2	32.0	27.3	4.72	6.782		
1,200.0	1,191.7	1,198.8	1,193.0	2.9	2.6	-112.32	34.3	-91.4	37.2	31.8	5.44	6.846		
1,300.0	1,288.6	1,298.8	1,290.6	3.4	3.0	-113.68	44.7	-110.8	43.0	36.8	6.23	6.903		
1,400.0	1,384.9	1,398.9	1,387.5	3.9	3.5	-114.49	56.3	-132.5	49.4	42.2	7.11	6.945		
1,500.0	1,480.4	1,498.9	1,483.8	4.4	4.0	-114.90	69.2	-156.4	56.2	48.2	8.07	6.968		
1,600.0	1,575.0	1,599.0	1,579.4	5.0	4.5	-115.03	83.2	-182.5	63.7	54.6	9.13	6.975		
1,700.0	1,668.9	1,698.8	1,674.1	5.6	5.1	-115.28	98.2	-210.4	71.7	61.5	10.25	7.001		
1,800.0	1,761.7	1,798.4	1,768.4	6.3	5.7	-116.94	113.3	-238.4	80.9	69.5	11.33	7.138		
1,900.0	1,853.6	1,897.7	1,862.5	7.1	6.3	-119.67	128.3	-266.4	91.3	79.0	12.35	7.397		
2,000.0	1,944.5	1,996.9	1,956.5	7.8	6.8	-122.97	143.3	-294.4	103.3	90.0	13.28	7.777		
2,100.0	2,035.3	2,095.9	2,050.3	8.6	7.4	-125.80	158.3	-322.3	115.7	101.5	14.17	8.163		
2,200.0	2,126.1	2,195.0	2,144.2	9.4	8.0	-128.09	173.3	-350.2	128.3	113.2	15.05	8.525		
2,300.0	2,216.9	2,294.1	2,238.1	10.1	8.6	-129.96	188.3	-378.1	141.1	125.2	15.93	8.860		
2,400.0	2,307.6	2,393.2	2,332.0	10.9	9.2	-131.51	203.3	-406.0	154.0	137.2	16.80	9.170		
2,500.0	2,398.4	2,492.3	2,425.8	11.7	9.8	-132.83	218.3	-434.0	167.0	149.4	17.67	9.456		
2,600.0	2,489.2	2,591.3	2,519.7	12.5	10.4	-133.96	233.3	-461.9	180.1	161.6	18.53	9.719		
2,700.0	2,579.9	2,690.4	2,613.6	13.2	11.0	-134.93	248.3	-489.8	193.3	173.9	19.40	9.962		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-30D (F28 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	-75.00	4.0	-15.0	15.5					
100.0	100.0	100.0	100.0	0.1	0.1	-75.00	4.0	-15.0	15.5	15.2	0.30	52.186		
200.0	200.0	200.0	200.0	0.3	0.3	-75.00	4.0	-15.0	15.5	14.8	0.65	23.978 CC, ES		
300.0	300.0	299.6	299.6	0.5	0.5	-73.55	4.7	-16.0	16.7	15.7	0.99	16.810		
400.0	400.0	399.1	399.0	0.7	0.7	-22.82	6.9	-19.3	19.3	17.9	1.34	14.342		
500.0	499.9	498.6	498.3	0.9	0.9	-22.17	10.5	-24.6	21.9	20.2	1.69	12.936		
600.0	599.7	597.9	597.2	1.1	1.1	-22.37	15.6	-32.1	24.7	22.6	2.05	12.033		
700.0	699.3	697.2	695.8	1.3	1.4	-23.16	22.1	-41.7	27.5	25.1	2.41	11.397		
800.0	798.6	796.5	794.1	1.5	1.7	-24.38	30.1	-53.4	30.4	27.6	2.79	10.911		
900.0	897.5	895.6	891.8	1.8	2.0	-25.89	39.4	-67.3	33.5	30.3	3.19	10.504		
1,000.0	996.1	994.7	989.0	2.1	2.4	-27.61	50.2	-83.2	36.6	33.0	3.62	10.134		
1,100.0	1,094.2	1,093.7	1,085.6	2.5	2.8	-29.47	62.4	-101.1	39.9	35.9	4.09	9.771		
1,200.0	1,191.7	1,192.7	1,181.5	2.9	3.2	-31.41	75.9	-121.2	43.4	38.8	4.62	9.400		
1,300.0	1,288.6	1,291.6	1,276.8	3.4	3.7	-33.40	90.9	-143.2	47.1	41.8	5.22	9.014		
1,400.0	1,384.9	1,390.3	1,371.2	3.9	4.3	-35.41	107.2	-167.3	50.9	45.0	5.91	8.617		
1,500.0	1,480.4	1,489.1	1,464.7	4.4	4.9	-37.41	124.8	-193.3	54.9	48.2	6.69	8.214		
1,600.0	1,575.0	1,587.8	1,557.5	5.0	5.5	-39.38	143.8	-221.4	59.2	51.6	7.57	7.817		
1,700.0	1,668.9	1,687.7	1,650.9	5.6	6.1	-42.13	163.7	-250.6	62.4	53.8	8.63	7.230		
1,800.0	1,761.7	1,787.6	1,744.3	6.3	6.8	-46.25	183.5	-279.9	64.0	54.0	9.98	6.409		
1,900.0	1,853.6	1,887.4	1,837.7	7.1	7.4	-51.96	203.2	-309.1	64.2	52.5	11.68	5.495		
2,000.0	1,944.5	1,987.0	1,930.9	7.8	8.1	-59.34	223.0	-338.2	63.8	50.1	13.72	4.649		
2,003.6	1,947.8	1,990.6	1,934.3	7.9	8.1	-59.62	223.7	-339.3	63.8	50.0	13.80	4.624		
2,100.0	2,035.3	2,086.7	2,024.1	8.6	8.7	-67.00	242.7	-367.4	64.3	48.5	15.84	4.061		
2,200.0	2,126.1	2,186.3	2,117.3	9.4	9.4	-74.40	262.5	-396.5	66.0	48.1	17.89	3.689		
2,300.0	2,216.9	2,285.9	2,210.5	10.1	10.0	-81.33	282.2	-425.7	68.7	48.9	19.78	3.473		
2,400.0	2,307.6	2,385.5	2,303.7	10.9	10.7	-87.65	302.0	-454.8	72.3	50.8	21.49	3.366		
2,500.0	2,398.4	2,485.2	2,396.9	11.7	11.4	-93.31	321.7	-484.0	76.8	53.8	23.00	3.337 SF		
2,600.0	2,489.2	2,584.8	2,490.1	12.5	12.0	-98.32	341.5	-513.2	81.8	57.5	24.35	3.362		
2,700.0	2,579.9	2,684.4	2,583.3	13.2	12.7	-102.71	361.2	-542.3	87.5	61.9	25.55	3.424		
2,800.0	2,670.7	2,784.1	2,676.5	14.0	13.3	-106.55	381.0	-571.5	93.6	66.9	26.65	3.512		
2,900.0	2,761.5	2,883.7	2,769.7	14.8	14.0	-109.91	400.7	-600.6	100.1	72.4	27.66	3.617		
3,000.0	2,852.2	2,983.3	2,862.9	15.6	14.7	-112.85	420.5	-629.8	106.8	78.2	28.62	3.733		
3,100.0	2,943.0	3,082.9	2,956.1	16.4	15.3	-115.44	440.2	-658.9	113.8	84.3	29.52	3.856		
3,200.0	3,033.8	3,182.6	3,049.3	17.1	16.0	-117.73	460.0	-688.1	121.1	90.7	30.40	3.982		
3,300.0	3,124.5	3,282.2	3,142.5	17.9	16.6	-119.75	479.7	-717.2	128.4	97.2	31.25	4.110		
3,400.0	3,215.3	3,381.8	3,235.7	18.7	17.3	-121.56	499.5	-746.4	136.0	103.9	32.08	4.238		
3,500.0	3,306.1	3,481.5	3,328.9	19.5	18.0	-123.17	519.2	-775.5	143.6	110.7	32.90	4.365		
3,600.0	3,396.8	3,581.1	3,422.1	20.3	18.6	-124.62	539.0	-804.7	151.4	117.7	33.72	4.489		
3,700.0	3,487.6	3,680.7	3,515.3	21.1	19.3	-125.92	558.7	-833.9	159.2	124.7	34.53	4.611		
3,800.0	3,578.4	3,780.4	3,608.5	21.9	19.9	-127.11	578.5	-863.0	167.1	131.8	35.33	4.730		
3,900.0	3,669.1	3,880.0	3,701.7	22.6	20.6	-128.19	598.2	-892.2	175.1	139.0	36.14	4.846		
4,000.0	3,759.9	3,979.6	3,794.9	23.4	21.3	-129.17	618.0	-921.3	183.1	146.2	36.94	4.958		
4,100.0	3,850.7	4,079.2	3,888.1	24.2	21.9	-130.07	637.7	-950.5	191.2	153.5	37.74	5.067		
4,200.0	3,941.4	4,178.9	3,981.3	25.0	22.6	-130.90	657.5	-979.6	199.4	160.8	38.54	5.172		

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

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T6S-R97W (F28 Pad) - Oxy 28-32D (F28 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	109.87	-5.1	14.1	15.0					
100.0	100.0	100.0	100.0	0.1	0.1	109.87	-5.1	14.1	15.0	14.7	0.30	50.566		
200.0	200.0	200.0	200.0	0.3	0.3	109.87	-5.1	14.1	15.0	14.4	0.65	23.233		
300.0	300.0	300.3	300.3	0.5	0.5	107.36	-4.1	13.2	13.9	12.9	1.00	13.911		
400.0	400.0	400.6	400.5	0.7	0.7	149.14	-1.2	10.5	11.7	10.4	1.35	8.681		
500.0	499.9	500.7	500.4	0.9	0.9	138.05	3.6	6.1	10.0	8.3	1.72	5.823		
600.0	599.7	600.9	600.1	1.1	1.1	122.41	10.3	-0.2	9.1	6.9	2.15	4.233		
639.6	639.2	640.5	639.5	1.1	1.2	115.32	13.5	-3.1	9.0	6.7	2.34	3.842 CC		
700.0	699.3	700.9	699.4	1.3	1.4	104.44	19.0	-8.1	9.2	6.6	2.65	3.476 ES		
800.0	798.6	800.8	798.4	1.5	1.7	88.56	29.5	-17.9	10.5	7.2	3.20	3.263 SF		
900.0	897.5	900.7	896.8	1.8	2.0	77.07	42.0	-29.4	12.6	8.8	3.77	3.331		
1,000.0	996.1	1,000.5	994.7	2.1	2.4	69.53	56.3	-42.6	15.3	10.9	4.36	3.502		
1,100.0	1,094.2	1,100.2	1,091.9	2.5	2.8	64.73	72.5	-57.6	18.4	13.4	4.99	3.686		
1,200.0	1,191.7	1,200.0	1,188.6	2.9	3.3	61.72	90.5	-74.2	21.9	16.2	5.68	3.846		
1,300.0	1,288.6	1,299.5	1,284.4	3.4	3.8	59.88	110.3	-92.5	25.6	19.1	6.44	3.972		
1,400.0	1,384.9	1,399.0	1,379.4	3.9	4.3	58.80	132.0	-112.5	29.5	22.2	7.27	4.060		
1,500.0	1,480.4	1,498.4	1,473.5	4.4	4.9	58.24	155.4	-134.2	33.7	25.5	8.18	4.116		
1,600.0	1,575.0	1,597.7	1,566.7	5.0	5.5	58.04	180.6	-157.5	38.0	28.9	9.18	4.144		
1,700.0	1,668.9	1,697.0	1,658.9	5.6	6.2	58.09	207.6	-182.4	42.6	32.3	10.27	4.149		
1,800.0	1,761.7	1,796.1	1,750.1	6.3	6.9	58.31	236.3	-208.9	47.4	35.9	11.45	4.137		
1,900.0	1,853.6	1,895.2	1,840.1	7.1	7.7	58.66	266.7	-237.0	52.3	39.6	12.73	4.112		
2,000.0	1,944.5	1,994.3	1,929.0	7.8	8.5	58.89	298.8	-266.7	57.7	43.6	14.06	4.099		
2,100.0	2,035.3	2,093.6	2,017.2	8.6	9.4	57.81	332.4	-297.7	64.1	48.9	15.24	4.206		
2,200.0	2,126.1	2,193.4	2,105.6	9.4	10.2	56.73	366.4	-329.1	70.8	54.4	16.39	4.316		
2,300.0	2,216.9	2,293.1	2,194.0	10.1	11.1	55.85	400.3	-360.5	77.4	59.9	17.55	4.412		
2,400.0	2,307.6	2,392.9	2,282.4	10.9	11.9	55.10	434.3	-391.9	84.1	65.4	18.70	4.497		
2,500.0	2,398.4	2,492.7	2,370.8	11.7	12.8	54.46	468.3	-423.3	90.8	71.0	19.86	4.573		
2,600.0	2,489.2	2,592.5	2,459.2	12.5	13.6	53.91	502.3	-454.7	97.5	76.5	21.01	4.641		
2,700.0	2,579.9	2,692.2	2,547.6	13.2	14.5	53.43	536.2	-486.1	104.2	82.1	22.17	4.701		
2,800.0	2,670.7	2,792.0	2,636.0	14.0	15.3	53.01	570.2	-517.5	111.0	87.6	23.33	4.756		
2,900.0	2,761.5	2,891.8	2,724.4	14.8	16.2	52.63	604.2	-548.9	117.7	93.2	24.49	4.806		
3,000.0	2,852.2	2,991.5	2,812.8	15.6	17.0	52.30	638.2	-580.2	124.4	98.8	25.65	4.851		
3,100.0	2,943.0	3,091.3	2,901.2	16.4	17.9	52.00	672.1	-611.6	131.2	104.3	26.81	4.892		
3,200.0	3,033.8	3,191.1	2,989.6	17.1	18.8	51.73	706.1	-643.0	137.9	109.9	27.97	4.930		
3,300.0	3,124.5	3,290.8	3,078.0	17.9	19.6	51.49	740.1	-674.4	144.6	115.5	29.13	4.965		
3,400.0	3,215.3	3,390.6	3,166.4	18.7	20.5	51.27	774.0	-705.8	151.4	121.1	30.29	4.997		
3,500.0	3,306.1	3,490.4	3,254.8	19.5	21.3	51.06	808.0	-737.2	158.1	126.7	31.45	5.027		
3,600.0	3,396.8	3,590.2	3,343.2	20.3	22.2	50.88	842.0	-768.6	164.9	132.3	32.62	5.055		
3,700.0	3,487.6	3,689.9	3,431.6	21.1	23.1	50.70	876.0	-800.0	171.6	137.9	33.78	5.081		
3,800.0	3,578.4	3,789.7	3,520.0	21.9	23.9	50.54	909.9	-831.4	178.4	143.4	34.94	5.105		
3,900.0	3,669.1	3,889.5	3,608.4	22.6	24.8	50.40	943.9	-862.8	185.1	149.0	36.10	5.128		
4,000.0	3,759.9	3,989.2	3,696.8	23.4	25.6	50.26	977.9	-894.1	191.9	154.6	37.27	5.149		
4,100.0	3,850.7	4,089.0	3,785.2	24.2	26.5	50.13	1,011.8	-925.5	198.6	160.2	38.43	5.169		

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

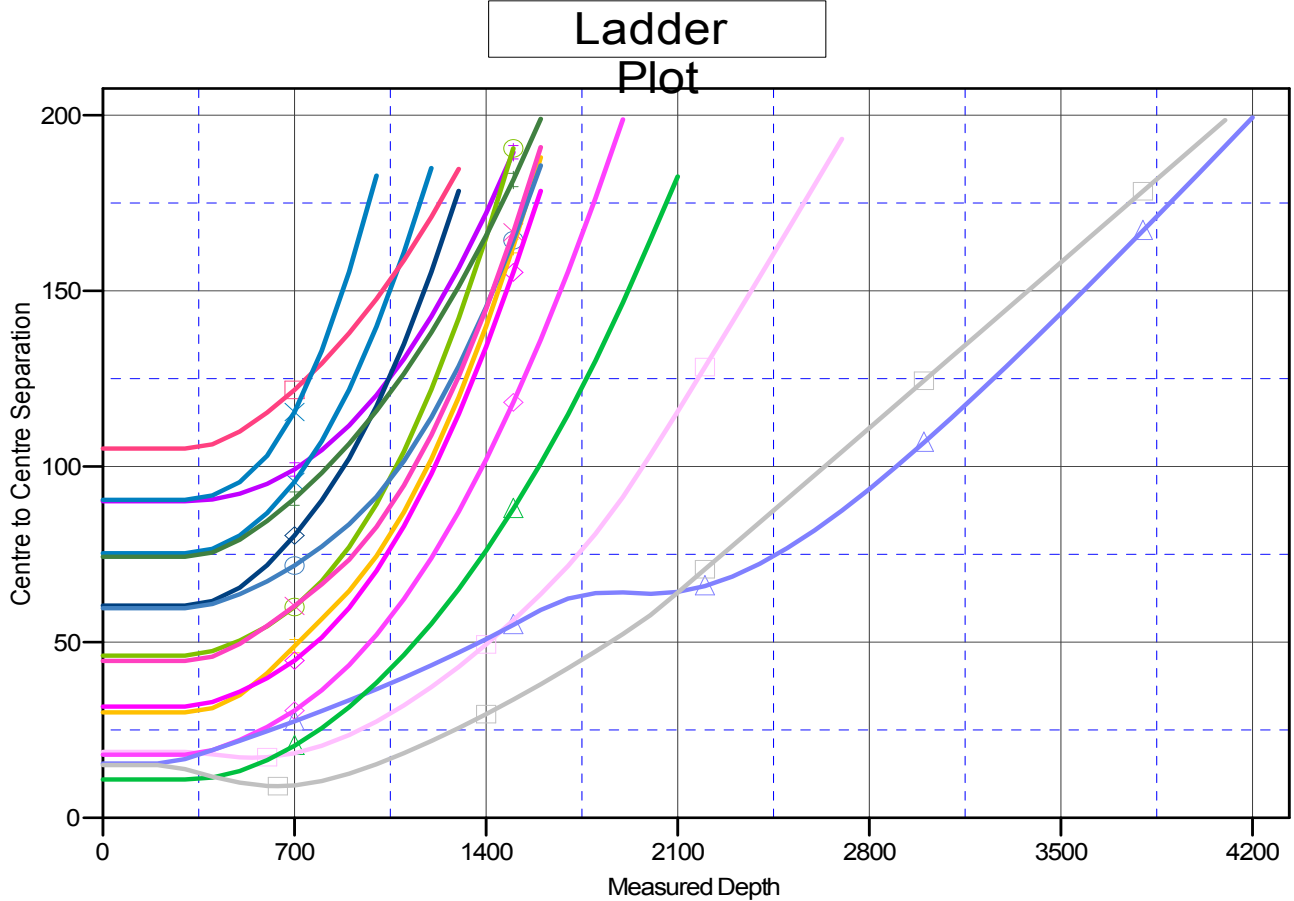
Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-31D (F28 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8308.0ft (Original Well Elev)
Reference Site:	SENW S28-T6S-R97W (F28 Pad)	MD Reference:	KBE @ 8308.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 28-31D (F28 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 2003.21 US Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 8308.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Oxy 28-31D (F28 Pad)
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.72°



LEGEND

Oxy 28-24D (F28 Pad), DD, Plan #1 V0	Oxy 28-19D (F28 Pad), DD, Plan #1 V0	Oxy 28-15D (F28 Pad), DD, Plan #1 V0
Oxy 28-29D (F28 Pad), DD, Plan #1 V0	Oxy 28-22D (F28 Pad), DD, Plan #1 V0	Oxy 28-28D (F28 Pad), DD, Plan #1 V0
Oxy 28-25D (F28 Pad), DD, Plan #1 V0	Oxy 28-18D (F28 pad), DD, Plan #1 V0	Oxy 28-23D (F28 Pad), DD, Plan #1 V0
Oxy 28-27D (F28 Pad), DD, Plan #1 V0	Oxy 28-21D (F28 Pad), DD, Plan #1 V0	Oxy 28-32D (F28 Pad), DD, Plan #1 V0
Oxy 28-17D (F28 Pad), DD, Plan #1 V0	Oxy 28-20D (F28 Pad), DD, Plan #1 V0	
Oxy 28-30D (F28 Pad), DD, Plan #1 V0	Oxy 28-26D (F28 Pad), DD, Plan #1 V0	