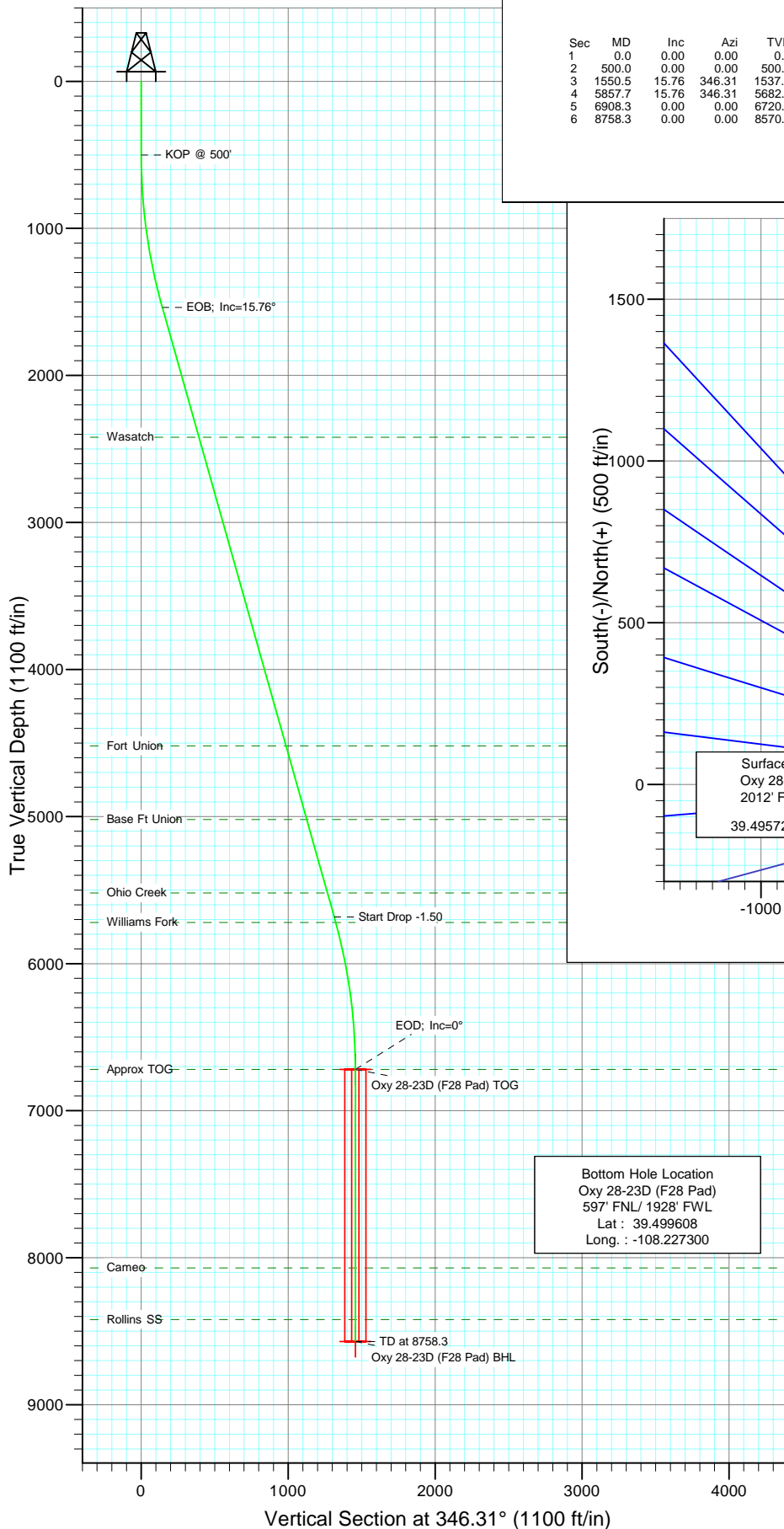




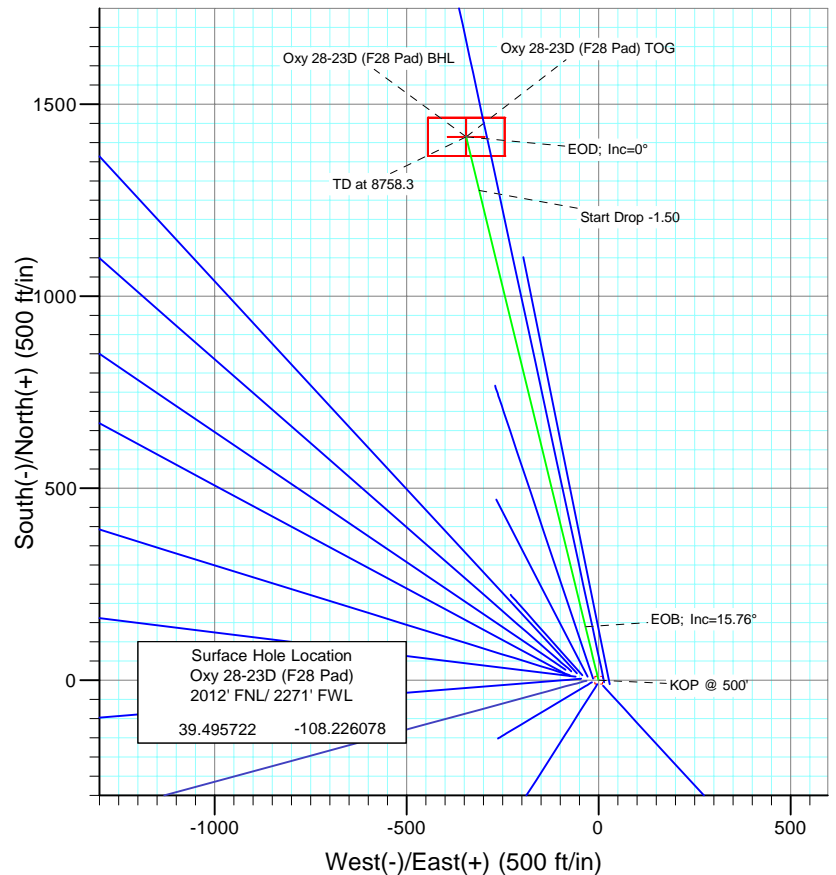
Berry Petroleum Company

Project: Garfield County
Site: SENW S28-T6S-R97W (F28 Pad)
Well: Oxy 28-23D (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	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	1550.5	15.76	346.31	1537.3	139.5	-34.0	1.50	346.31	143.6	
4	5857.7	15.76	346.31	5682.7	1276.0	-310.9	0.00	0.00	1313.3	
5	6908.3	0.00	0.00	6720.0	1415.5	-344.8	1.50	180.00	1456.8	Oxy 28-23D (F28 Pad) TOG
6	8758.3	0.00	0.00	8570.0	1415.5	-344.8	0.00	0.00	1456.8	Oxy 28-23D (F28 Pad) BHL



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2420.0	2467.7	Wasatch
4520.0	4649.7	Fort Union
5020.0	5169.2	Base Ft Union
5520.0	5688.7	Ohio Creek
5720.0	5896.5	Williams Fork
6720.0	6908.3	Approx TOG
8070.0	8258.3	Cameo
8420.0	8608.3	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 28-23D (F28 Pad) BHL	346.31	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 28-23D (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 28-23D (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 28-23D (F28 Pad)			
Well Position	+N/-S	0.0 ft	Northing:	1,616,990.41 ft
	+E/-W	0.0 ft	Easting:	2,230,816.38 ft
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) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	346.31

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,550.5	15.76	346.31	1,537.3	139.5	-34.0	1.50	1.50	0.00	346.31	
5,857.7	15.76	346.31	5,682.7	1,276.0	-310.9	0.00	0.00	0.00	0.00	
6,908.3	0.00	0.00	6,720.0	1,415.5	-344.8	1.50	-1.50	0.00	180.00	Oxy 28-23D (F28 Pad
8,758.3	0.00	0.00	8,570.0	1,415.5	-344.8	0.00	0.00	0.00	0.00	Oxy 28-23D (F28 Pad

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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	
330.0	0.00	0.00	330.0	0.0	0.0	0.0	0.00	0.00	
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	
390.0	0.00	0.00	390.0	0.0	0.0	0.0	0.00	0.00	
420.0	0.00	0.00	420.0	0.0	0.0	0.0	0.00	0.00	
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500'
510.0	0.15	346.31	510.0	0.0	0.0	0.0	1.50	1.50	
540.0	0.60	346.31	540.0	0.2	0.0	0.2	1.50	1.50	
570.0	1.05	346.31	570.0	0.6	-0.2	0.6	1.50	1.50	
600.0	1.50	346.31	600.0	1.3	-0.3	1.3	1.50	1.50	
630.0	1.95	346.31	630.0	2.1	-0.5	2.2	1.50	1.50	
660.0	2.40	346.31	660.0	3.3	-0.8	3.4	1.50	1.50	
690.0	2.85	346.31	689.9	4.6	-1.1	4.7	1.50	1.50	
720.0	3.30	346.31	719.9	6.2	-1.5	6.3	1.50	1.50	
750.0	3.75	346.31	749.8	7.9	-1.9	8.2	1.50	1.50	
780.0	4.20	346.31	779.7	10.0	-2.4	10.3	1.50	1.50	
810.0	4.65	346.31	809.7	12.2	-3.0	12.6	1.50	1.50	
840.0	5.10	346.31	839.6	14.7	-3.6	15.1	1.50	1.50	
870.0	5.55	346.31	869.4	17.4	-4.2	17.9	1.50	1.50	
900.0	6.00	346.31	899.3	20.3	-5.0	20.9	1.50	1.50	
930.0	6.45	346.31	929.1	23.5	-5.7	24.2	1.50	1.50	
960.0	6.90	346.31	958.9	26.9	-6.5	27.7	1.50	1.50	
990.0	7.35	346.31	988.7	30.5	-7.4	31.4	1.50	1.50	
1,020.0	7.80	346.31	1,018.4	34.3	-8.4	35.3	1.50	1.50	
1,050.0	8.25	346.31	1,048.1	38.4	-9.4	39.5	1.50	1.50	
1,080.0	8.70	346.31	1,077.8	42.7	-10.4	44.0	1.50	1.50	
1,110.0	9.15	346.31	1,107.4	47.2	-11.5	48.6	1.50	1.50	
1,140.0	9.60	346.31	1,137.0	52.0	-12.7	53.5	1.50	1.50	
1,170.0	10.05	346.31	1,166.6	56.9	-13.9	58.6	1.50	1.50	
1,200.0	10.50	346.31	1,196.1	62.1	-15.1	64.0	1.50	1.50	
1,230.0	10.95	346.31	1,225.6	67.6	-16.5	69.5	1.50	1.50	
1,260.0	11.40	346.31	1,255.0	73.2	-17.8	75.4	1.50	1.50	
1,290.0	11.85	346.31	1,284.4	79.1	-19.3	81.4	1.50	1.50	
1,320.0	12.30	346.31	1,313.7	85.2	-20.8	87.7	1.50	1.50	
1,350.0	12.75	346.31	1,343.0	91.5	-22.3	94.2	1.50	1.50	
1,380.0	13.20	346.31	1,372.2	98.1	-23.9	100.9	1.50	1.50	
1,410.0	13.65	346.31	1,401.4	104.8	-25.5	107.9	1.50	1.50	
1,440.0	14.10	346.31	1,430.5	111.8	-27.2	115.1	1.50	1.50	
1,470.0	14.55	346.31	1,459.6	119.0	-29.0	122.5	1.50	1.50	
1,500.0	15.00	346.31	1,488.6	126.5	-30.8	130.2	1.50	1.50	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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
1,530.0	15.45	346.31	1,517.6	134.1	-32.7	138.0	1.50	1.50	
1,550.5	15.76	346.31	1,537.3	139.5	-34.0	143.6	1.50	1.50	EOB; Inc=15.76°
1,560.0	15.76	346.31	1,546.5	142.0	-34.6	146.1	0.00	0.00	
1,590.0	15.76	346.31	1,575.3	149.9	-36.5	154.3	0.00	0.00	
1,620.0	15.76	346.31	1,604.2	157.8	-38.4	162.4	0.00	0.00	
1,650.0	15.76	346.31	1,633.1	165.7	-40.4	170.6	0.00	0.00	
1,680.0	15.76	346.31	1,661.9	173.6	-42.3	178.7	0.00	0.00	
1,710.0	15.76	346.31	1,690.8	181.6	-44.2	186.9	0.00	0.00	
1,740.0	15.76	346.31	1,719.7	189.5	-46.2	195.0	0.00	0.00	
1,770.0	15.76	346.31	1,748.6	197.4	-48.1	203.2	0.00	0.00	
1,800.0	15.76	346.31	1,777.4	205.3	-50.0	211.3	0.00	0.00	
1,830.0	15.76	346.31	1,806.3	213.2	-51.9	219.5	0.00	0.00	
1,860.0	15.76	346.31	1,835.2	221.1	-53.9	227.6	0.00	0.00	
1,890.0	15.76	346.31	1,864.0	229.0	-55.8	235.7	0.00	0.00	
1,920.0	15.76	346.31	1,892.9	237.0	-57.7	243.9	0.00	0.00	
1,950.0	15.76	346.31	1,921.8	244.9	-59.7	252.0	0.00	0.00	
1,980.0	15.76	346.31	1,950.7	252.8	-61.6	260.2	0.00	0.00	
2,010.0	15.76	346.31	1,979.5	260.7	-63.5	268.3	0.00	0.00	
2,040.0	15.76	346.31	2,008.4	268.6	-65.4	276.5	0.00	0.00	
2,070.0	15.76	346.31	2,037.3	276.5	-67.4	284.6	0.00	0.00	
2,100.0	15.76	346.31	2,066.2	284.5	-69.3	292.8	0.00	0.00	
2,130.0	15.76	346.31	2,095.0	292.4	-71.2	300.9	0.00	0.00	
2,160.0	15.76	346.31	2,123.9	300.3	-73.2	309.1	0.00	0.00	
2,190.0	15.76	346.31	2,152.8	308.2	-75.1	317.2	0.00	0.00	
2,220.0	15.76	346.31	2,181.6	316.1	-77.0	325.4	0.00	0.00	
2,250.0	15.76	346.31	2,210.5	324.0	-78.9	333.5	0.00	0.00	
2,280.0	15.76	346.31	2,239.4	332.0	-80.9	341.7	0.00	0.00	
2,310.0	15.76	346.31	2,268.3	339.9	-82.8	349.8	0.00	0.00	
2,340.0	15.76	346.31	2,297.1	347.8	-84.7	358.0	0.00	0.00	
2,370.0	15.76	346.31	2,326.0	355.7	-86.7	366.1	0.00	0.00	
2,400.0	15.76	346.31	2,354.9	363.6	-88.6	374.3	0.00	0.00	
2,430.0	15.76	346.31	2,383.8	371.5	-90.5	382.4	0.00	0.00	
2,460.0	15.76	346.31	2,412.6	379.4	-92.4	390.5	0.00	0.00	
2,467.7	15.76	346.31	2,420.0	381.5	-92.9	392.6	0.00	0.00	Wasatch
2,490.0	15.76	346.31	2,441.5	387.4	-94.4	398.7	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 28-23D (F28 Pad) E	0.00	0.00	8,570.0	1,415.5	-344.8	1,618,415.57	2,230,514.17	39.499608	-108.227300
- plan misses target center by 6219.2ft at 2490.0ft MD (2441.5 TVD, 387.4 N, -94.4 E)									
- Rectangle (sides W100.0 H200.0 D0.0)									
Oxy 28-23D (F28 Pad) T	0.00	0.00	6,720.0	1,415.5	-344.8	1,618,415.57	2,230,514.17	39.499608	-108.227300
- plan misses target center by 4407.4ft at 2490.0ft MD (2441.5 TVD, 387.4 N, -94.4 E)									
- Point									

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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	15.76	346.31	2,451.1	390.0	-95.0	401.4	0.00	0.00	
2,600.0	15.76	346.31	2,547.4	416.4	-101.4	428.6	0.00	0.00	
2,700.0	15.76	346.31	2,643.6	442.8	-107.9	455.7	0.00	0.00	
2,800.0	15.76	346.31	2,739.8	469.2	-114.3	482.9	0.00	0.00	
2,900.0	15.76	346.31	2,836.1	495.5	-120.7	510.0	0.00	0.00	
3,000.0	15.76	346.31	2,932.3	521.9	-127.2	537.2	0.00	0.00	
3,100.0	15.76	346.31	3,028.6	548.3	-133.6	564.4	0.00	0.00	
3,200.0	15.76	346.31	3,124.8	574.7	-140.0	591.5	0.00	0.00	
3,300.0	15.76	346.31	3,221.1	601.1	-146.4	618.7	0.00	0.00	
3,400.0	15.76	346.31	3,317.3	627.5	-152.9	645.8	0.00	0.00	
3,500.0	15.76	346.31	3,413.5	653.9	-159.3	673.0	0.00	0.00	
3,600.0	15.76	346.31	3,509.8	680.2	-165.7	700.1	0.00	0.00	
3,700.0	15.76	346.31	3,606.0	706.6	-172.2	727.3	0.00	0.00	
3,800.0	15.76	346.31	3,702.3	733.0	-178.6	754.5	0.00	0.00	
3,900.0	15.76	346.31	3,798.5	759.4	-185.0	781.6	0.00	0.00	
4,000.0	15.76	346.31	3,894.7	785.8	-191.4	808.8	0.00	0.00	
4,100.0	15.76	346.31	3,991.0	812.2	-197.9	835.9	0.00	0.00	
4,200.0	15.76	346.31	4,087.2	838.6	-204.3	863.1	0.00	0.00	
4,300.0	15.76	346.31	4,183.5	865.0	-210.7	890.2	0.00	0.00	
4,400.0	15.76	346.31	4,279.7	891.3	-217.1	917.4	0.00	0.00	
4,500.0	15.76	346.31	4,376.0	917.7	-223.6	944.6	0.00	0.00	
4,600.0	15.76	346.31	4,472.2	944.1	-230.0	971.7	0.00	0.00	
4,649.7	15.76	346.31	4,520.0	957.2	-233.2	985.2	0.00	0.00	Fort Union
4,700.0	15.76	346.31	4,568.4	970.5	-236.4	998.9	0.00	0.00	
4,800.0	15.76	346.31	4,664.7	996.9	-242.9	1,026.0	0.00	0.00	
4,900.0	15.76	346.31	4,760.9	1,023.3	-249.3	1,053.2	0.00	0.00	
5,000.0	15.76	346.31	4,857.2	1,049.7	-255.7	1,080.4	0.00	0.00	
5,100.0	15.76	346.31	4,953.4	1,076.0	-262.1	1,107.5	0.00	0.00	
5,169.2	15.76	346.31	5,020.0	1,094.3	-266.6	1,126.3	0.00	0.00	Base Ft Union
5,200.0	15.76	346.31	5,049.6	1,102.4	-268.6	1,134.7	0.00	0.00	
5,300.0	15.76	346.31	5,145.9	1,128.8	-275.0	1,161.8	0.00	0.00	
5,400.0	15.76	346.31	5,242.1	1,155.2	-281.4	1,189.0	0.00	0.00	
5,500.0	15.76	346.31	5,338.4	1,181.6	-287.9	1,216.1	0.00	0.00	
5,600.0	15.76	346.31	5,434.6	1,208.0	-294.3	1,243.3	0.00	0.00	
5,688.7	15.76	346.31	5,520.0	1,231.4	-300.0	1,267.4	0.00	0.00	Ohio Creek
5,700.0	15.76	346.31	5,530.9	1,234.4	-300.7	1,270.5	0.00	0.00	
5,800.0	15.76	346.31	5,627.1	1,260.7	-307.1	1,297.6	0.00	0.00	
5,857.7	15.76	346.31	5,682.7	1,276.0	-310.9	1,313.3	0.00	0.00	Start Drop -1.50
5,896.5	15.18	346.31	5,720.0	1,286.0	-313.3	1,323.6	1.50	-1.50	Williams Fork
5,900.0	15.12	346.31	5,723.4	1,286.9	-313.5	1,324.5	1.50	-1.50	
6,000.0	13.62	346.31	5,820.3	1,311.0	-319.4	1,349.4	1.50	-1.50	
6,100.0	12.12	346.31	5,917.8	1,332.7	-324.7	1,371.7	1.50	-1.50	
6,200.0	10.62	346.31	6,015.8	1,351.8	-329.3	1,391.4	1.50	-1.50	
6,300.0	9.12	346.31	6,114.3	1,368.5	-333.4	1,408.5	1.50	-1.50	
6,400.0	7.62	346.31	6,213.2	1,382.6	-336.8	1,423.1	1.50	-1.50	
6,500.0	6.12	346.31	6,312.5	1,394.3	-339.7	1,435.1	1.50	-1.50	
6,600.0	4.62	346.31	6,412.1	1,403.4	-341.9	1,444.4	1.50	-1.50	
6,700.0	3.12	346.31	6,511.8	1,409.9	-343.5	1,451.2	1.50	-1.50	
6,800.0	1.62	346.31	6,611.7	1,414.0	-344.5	1,455.3	1.50	-1.50	
6,900.0	0.12	346.31	6,711.7	1,415.4	-344.8	1,456.8	1.50	-1.50	
6,908.3	0.00	0.00	6,720.0	1,415.5	-344.8	1,456.8	1.50	-1.50	EOD; Inc=0° - Approx TOG - Oxy 28-23D (F28
7,000.0	0.00	0.00	6,811.7	1,415.5	-344.8	1,456.8	0.00	0.00	

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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
7,100.0	0.00	0.00	6,911.7	1,415.5	-344.8	1,456.8	0.00	0.00	
7,200.0	0.00	0.00	7,011.7	1,415.5	-344.8	1,456.8	0.00	0.00	
7,300.0	0.00	0.00	7,111.7	1,415.5	-344.8	1,456.8	0.00	0.00	
7,400.0	0.00	0.00	7,211.7	1,415.5	-344.8	1,456.8	0.00	0.00	
7,500.0	0.00	0.00	7,311.7	1,415.5	-344.8	1,456.8	0.00	0.00	
7,600.0	0.00	0.00	7,411.7	1,415.5	-344.8	1,456.8	0.00	0.00	
7,700.0	0.00	0.00	7,511.7	1,415.5	-344.8	1,456.8	0.00	0.00	
7,800.0	0.00	0.00	7,611.7	1,415.5	-344.8	1,456.8	0.00	0.00	
7,900.0	0.00	0.00	7,711.7	1,415.5	-344.8	1,456.8	0.00	0.00	
8,000.0	0.00	0.00	7,811.7	1,415.5	-344.8	1,456.8	0.00	0.00	
8,100.0	0.00	0.00	7,911.7	1,415.5	-344.8	1,456.8	0.00	0.00	
8,200.0	0.00	0.00	8,011.7	1,415.5	-344.8	1,456.8	0.00	0.00	
8,258.3	0.00	0.00	8,070.0	1,415.5	-344.8	1,456.8	0.00	0.00	Cameo
8,300.0	0.00	0.00	8,111.7	1,415.5	-344.8	1,456.8	0.00	0.00	
8,400.0	0.00	0.00	8,211.7	1,415.5	-344.8	1,456.8	0.00	0.00	
8,500.0	0.00	0.00	8,311.7	1,415.5	-344.8	1,456.8	0.00	0.00	
8,600.0	0.00	0.00	8,411.7	1,415.5	-344.8	1,456.8	0.00	0.00	
8,608.3	0.00	0.00	8,420.0	1,415.5	-344.8	1,456.8	0.00	0.00	Rollins SS
8,700.0	0.00	0.00	8,511.7	1,415.5	-344.8	1,456.8	0.00	0.00	
8,758.3	0.00	0.00	8,570.0	1,415.5	-344.8	1,456.8	0.00	0.00	TD at 8758.3 - Oxy 28-23D (F28 Pad) BHL

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
- Shape									Latitude Longitude
Oxy 28-23D (F28 Pad) E	- plan hits target center	0.00	0.00	8,570.0	1,415.5	-344.8	1,618,415.57	2,230,514.17	39.499608 -108.227300
	- Rectangle (sides W100.0 H200.0 D0.0)								
Oxy 28-23D (F28 Pad) T	- plan hits target center	0.00	0.00	6,720.0	1,415.5	-344.8	1,618,415.57	2,230,514.17	39.499608 -108.227300
	- Point								

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,467.7	2,420.0	Wasatch		0.00		
4,649.7	4,520.0	Fort Union		0.00		
5,169.2	5,020.0	Base Ft Union		0.00		
5,688.7	5,520.0	Ohio Creek		0.00		
5,896.5	5,720.0	Williams Fork		0.00		
6,908.3	6,720.0	Approx TOG		0.00		
8,258.3	8,070.0	Cameo		0.00		
8,608.3	8,420.0	Rollins SS		0.00		

Directional Plus

Planning Report

Database:	EDM 2003.21 US Multi User Db	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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)	
500.0	500.0	0.0	0.0	KOP @ 500'
1,550.5	1,537.3	139.5	-34.0	EOB; Inc=15.76°
5,857.7	5,682.7	1,276.0	-310.9	Start Drop -1.50
6,908.3	6,720.0	1,415.5	-344.8	EOD; Inc=0°
8,758.3	8,570.0	1,415.5	-344.8	TD at 8758.3

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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	8,758.3	Plan #1 (DD)	MWD	Geolink MWD	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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

Summary

Site Name	Reference	Offset	Distance		Separation	Warning
	Measured	Measured	Between	Between		
Offset Well - Wellbore - Design	Depth	Depth	Centres	Ellipses	Factor	
	(ft)	(ft)	(ft)	(ft)		
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	500.0	500.0	18.5	16.8	10.926	CC, ES
Oxy 28-15D (F28 Pad) - DD - Plan #1	600.0	599.5	21.0	18.9	10.279	SF
Oxy 28-17D (F28 Pad) - DD - Plan #1	500.0	500.0	10.7	9.0	6.297	CC, ES
Oxy 28-17D (F28 Pad) - DD - Plan #1	600.0	600.0	11.8	9.8	5.782	SF
Oxy 28-18D (F28 pad) - DD - Plan #1	500.0	500.0	18.0	16.3	10.605	CC
Oxy 28-18D (F28 pad) - DD - Plan #1	600.0	600.0	18.1	16.0	8.842	ES
Oxy 28-18D (F28 pad) - DD - Plan #1	700.0	699.4	20.2	17.8	8.447	SF
Oxy 28-19D (F28 Pad) - DD - Plan #1	715.6	714.5	42.9	40.4	17.487	CC, ES
Oxy 28-19D (F28 Pad) - DD - Plan #1	1,200.0	1,196.1	54.8	50.2	12.016	SF
Oxy 28-20D (F28 Pad) - DD - Plan #1	500.0	500.0	29.7	28.0	17.515	CC
Oxy 28-20D (F28 Pad) - DD - Plan #1	600.0	599.5	29.9	27.8	14.637	ES
Oxy 28-20D (F28 Pad) - DD - Plan #1	1,200.0	1,197.4	36.4	31.7	7.790	SF
Oxy 28-21D (F28 Pad) - DD - Plan #1	400.0	400.0	14.7	13.3	10.914	CC, ES
Oxy 28-21D (F28 Pad) - DD - Plan #1	1,400.1	1,397.4	21.4	15.2	3.453	SF
Oxy 28-22D (F28 Pad) - DD - Plan #1	500.0	500.0	30.8	29.1	18.195	CC
Oxy 28-22D (F28 Pad) - DD - Plan #1	1,200.0	1,202.9	32.8	28.1	6.985	ES
Oxy 28-22D (F28 Pad) - DD - Plan #1	1,500.0	1,503.1	38.1	31.5	5.835	SF
Oxy 28-24D (F28 Pad) - DD - Plan #1	553.3	553.5	13.6	11.7	7.121	CC, ES
Oxy 28-24D (F28 Pad) - DD - Plan #1	700.0	699.8	15.7	13.2	6.358	SF
Oxy 28-25D (F28 Pad) - DD - Plan #1	400.0	400.0	31.3	30.0	23.323	CC, ES
Oxy 28-25D (F28 Pad) - DD - Plan #1	700.0	696.9	42.4	40.0	17.696	SF
Oxy 28-26D (F28 Pad) - DD - Plan #1	400.0	400.0	45.6	44.3	33.939	CC, ES
Oxy 28-26D (F28 Pad) - DD - Plan #1	800.0	793.8	63.9	61.1	23.165	SF
Oxy 28-27D (F28 Pad) - DD - Plan #1	400.0	400.0	60.2	58.9	44.822	CC, ES
Oxy 28-27D (F28 Pad) - DD - Plan #1	900.0	889.8	86.7	83.6	27.604	SF
Oxy 28-28D (F28 Pad) - DD - Plan #1	400.0	400.0	75.6	74.3	56.289	CC, ES
Oxy 28-28D (F28 Pad) - DD - Plan #1	1,300.0	1,271.3	157.2	152.0	30.405	SF
Oxy 28-29D (F28 Pad) - DD - Plan #1	400.0	400.0	90.5	89.1	67.314	CC, ES
Oxy 28-29D (F28 Pad) - DD - Plan #1	1,500.0	1,460.6	195.2	188.6	29.389	SF
Oxy 28-30D (F28 Pad) - DD - Plan #1	200.0	200.0	89.8	89.1	139.004	CC, ES
Oxy 28-30D (F28 Pad) - DD - Plan #1	1,300.0	1,259.2	194.8	189.6	37.873	SF
Oxy 28-31D (F28 Pad) - DD - Plan #1	300.0	300.0	74.3	73.3	74.688	CC, ES
Oxy 28-31D (F28 Pad) - DD - Plan #1	1,600.0	1,557.9	194.4	186.9	25.874	SF
Oxy 28-32D (F28 Pad) - DD - Plan #1	200.0	200.0	59.3	58.7	91.837	CC, ES
Oxy 28-32D (F28 Pad) - DD - Plan #1	1,600.0	1,556.6	194.1	186.7	26.269	SF

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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			Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation	Warning			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor				
0.0	0.0	0.0	0.0	0.0	0.0	140.15	-14.2	11.9	18.5							
100.0	100.0	100.0	100.0	0.1	0.1	140.15	-14.2	11.9	18.5	18.2	0.30	62.342				
200.0	200.0	200.0	200.0	0.3	0.3	140.15	-14.2	11.9	18.5	17.9	0.65	28.644				
300.0	300.0	300.0	300.0	0.5	0.5	140.15	-14.2	11.9	18.5	17.5	0.99	18.593				
400.0	400.0	400.0	400.0	0.7	0.7	140.15	-14.2	11.9	18.5	17.2	1.34	13.764				
500.0	500.0	500.0	500.0	0.8	0.8	140.15	-14.2	11.9	18.5	16.8	1.69	10.926	CC, ES			
600.0	600.0	599.5	599.4	1.0	1.0	155.23	-15.2	12.7	21.0	18.9	2.04	10.279	SF			
700.0	699.9	698.5	698.4	1.2	1.2	157.92	-18.0	15.3	28.5	26.1	2.39	11.919				
800.0	799.7	796.9	796.6	1.4	1.4	160.20	-22.7	19.6	41.0	38.2	2.73	14.987				
900.0	899.3	894.1	893.4	1.6	1.6	161.73	-29.2	25.6	58.5	55.4	3.08	18.994				
1,000.0	998.6	989.8	988.5	1.9	1.8	162.70	-37.3	33.1	80.8	77.4	3.42	23.638				
1,100.0	1,097.5	1,083.8	1,081.5	2.1	2.1	163.30	-47.0	42.0	108.0	104.3	3.76	28.725				
1,200.0	1,196.1	1,175.6	1,172.1	2.4	2.4	163.69	-58.1	52.2	139.9	135.8	4.10	34.123				
1,300.0	1,294.2	1,265.2	1,260.1	2.8	2.7	163.92	-70.5	63.5	176.3	171.8	4.44	39.741				

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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 (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	-163.07	-10.2	-3.1	10.7								
100.0	100.0	100.0	100.0	0.1	0.1	-163.07	-10.2	-3.1	10.7	10.4	0.30	35.930					
200.0	200.0	200.0	200.0	0.3	0.3	-163.07	-10.2	-3.1	10.7	10.0	0.65	16.508					
300.0	300.0	300.0	300.0	0.5	0.5	-163.07	-10.2	-3.1	10.7	9.7	0.99	10.716					
400.0	400.0	400.0	400.0	0.7	0.7	-163.07	-10.2	-3.1	10.7	9.3	1.34	7.933					
500.0	500.0	500.0	500.0	0.8	0.8	-163.07	-10.2	-3.1	10.7	9.0	1.69	6.297	CC, ES				
600.0	600.0	600.0	600.0	1.0	1.0	-152.61	-10.2	-3.1	11.8	9.8	2.04	5.782	SF				
700.0	699.9	699.5	699.5	1.2	1.2	-157.37	-11.3	-3.8	16.6	14.2	2.39	6.939					
800.0	799.7	798.6	798.5	1.4	1.4	-159.41	-14.6	-5.9	26.2	23.5	2.74	9.571					
900.0	899.3	896.7	896.4	1.6	1.6	-159.92	-19.9	-9.3	40.6	37.5	3.09	13.146					
1,000.0	998.6	994.5	993.8	1.9	1.8	-160.02	-27.1	-13.8	59.4	55.9	3.44	17.261					
1,100.0	1,097.5	1,092.1	1,091.1	2.1	2.0	-160.56	-34.5	-18.6	80.8	77.0	3.79	21.307					
1,200.0	1,196.1	1,189.2	1,187.8	2.4	2.2	-161.29	-41.9	-23.2	104.7	100.5	4.15	25.241					
1,300.0	1,294.2	1,285.7	1,283.8	2.8	2.4	-162.07	-49.2	-27.9	131.0	126.5	4.50	29.093					
1,400.0	1,391.7	1,381.4	1,379.2	3.2	2.6	-162.84	-56.5	-32.5	159.7	154.8	4.86	32.887					
1,500.0	1,488.6	1,476.4	1,473.8	3.6	2.8	-163.55	-63.7	-37.1	190.8	185.6	5.21	36.639					

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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						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	-106.50	-5.1	-17.2	18.0					
100.0	100.0	100.0	100.0	0.1	0.1	-106.50	-5.1	-17.2	18.0	17.7	0.30	60.510		
200.0	200.0	200.0	200.0	0.3	0.3	-106.50	-5.1	-17.2	18.0	17.3	0.65	27.802		
300.0	300.0	300.0	300.0	0.5	0.5	-106.50	-5.1	-17.2	18.0	17.0	0.99	18.047		
400.0	400.0	400.0	400.0	0.7	0.7	-106.50	-5.1	-17.2	18.0	16.6	1.34	13.359		
500.0	500.0	500.0	500.0	0.8	0.8	-106.50	-5.1	-17.2	18.0	16.3	1.69	10.605 CC		
600.0	600.0	600.0	600.0	1.0	1.0	-96.96	-5.1	-17.2	18.1	16.0	2.04	8.842 ES		
700.0	699.9	699.4	699.4	1.2	1.2	-108.63	-5.8	-18.3	20.2	17.8	2.40	8.447 SF		
800.0	799.7	798.4	798.3	1.4	1.4	-121.54	-7.7	-21.6	26.9	24.2	2.76	9.771		
900.0	899.3	897.1	896.8	1.6	1.6	-130.66	-11.0	-27.0	38.4	35.3	3.12	12.301		
1,000.0	998.6	995.9	995.4	1.9	1.8	-137.11	-14.6	-33.0	52.9	49.4	3.49	15.131		
1,100.0	1,097.5	1,094.3	1,093.5	2.1	1.9	-142.07	-18.1	-39.0	69.7	65.9	3.87	18.020		
1,200.0	1,196.1	1,192.3	1,191.2	2.4	2.1	-145.98	-21.7	-44.9	89.1	84.8	4.25	20.958		
1,300.0	1,294.2	1,289.7	1,288.4	2.8	2.3	-149.15	-25.2	-50.8	110.9	106.3	4.63	23.941		
1,400.0	1,391.7	1,386.5	1,385.0	3.2	2.5	-151.75	-28.7	-56.7	135.2	130.2	5.01	26.966		
1,500.0	1,488.6	1,482.7	1,480.9	3.6	2.7	-153.92	-32.2	-62.5	162.0	156.6	5.39	30.029		
1,600.0	1,584.9	1,578.2	1,576.2	4.1	2.9	-155.81	-35.7	-68.3	190.9	185.2	5.78	33.049		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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				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	-72.79	13.1	-42.3	44.3					
100.0	100.0	100.0	100.0	0.1	0.1	-72.79	13.1	-42.3	44.3	44.0	0.30	149.356		
200.0	200.0	200.0	200.0	0.3	0.3	-72.79	13.1	-42.3	44.3	43.7	0.65	68.623		
300.0	300.0	300.0	300.0	0.5	0.5	-72.79	13.1	-42.3	44.3	43.3	0.99	44.545		
400.0	400.0	400.0	400.0	0.7	0.7	-72.79	13.1	-42.3	44.3	43.0	1.34	32.975		
500.0	500.0	500.0	500.0	0.8	0.8	-72.79	13.1	-42.3	44.3	42.6	1.69	26.176		
600.0	600.0	600.0	600.0	1.0	1.0	-60.58	13.1	-42.3	43.7	41.6	2.04	21.372		
700.0	699.9	699.0	699.0	1.2	1.2	-64.19	14.1	-43.2	42.9	40.5	2.40	17.910		
715.6	715.5	714.5	714.4	1.2	1.2	-64.86	14.4	-43.5	42.9	40.4	2.45	17.487 CC, ES		
800.0	799.7	798.1	798.0	1.4	1.4	-68.90	16.9	-45.7	43.3	40.6	2.76	15.688		
900.0	899.3	897.4	897.1	1.6	1.6	-74.38	21.7	-50.0	45.1	41.9	3.16	14.284		
1,000.0	998.6	997.1	996.6	1.9	1.8	-81.84	27.0	-54.7	47.2	43.7	3.59	13.161		
1,100.0	1,097.5	1,096.8	1,096.0	2.1	2.0	-91.51	32.3	-59.4	50.1	46.1	4.06	12.337		
1,200.0	1,196.1	1,196.1	1,195.1	2.4	2.2	-102.54	37.6	-64.1	54.8	50.2	4.56	12.016 SF		
1,300.0	1,294.2	1,295.2	1,293.9	2.8	2.4	-113.73	42.9	-68.8	62.2	57.2	5.05	12.324		
1,400.0	1,391.7	1,393.9	1,392.3	3.2	2.6	-123.95	48.1	-73.5	72.9	67.4	5.49	13.272		
1,500.0	1,488.6	1,492.1	1,490.3	3.6	2.8	-132.61	53.3	-78.1	87.1	81.2	5.90	14.778		
1,600.0	1,584.9	1,589.8	1,587.8	4.1	3.0	-139.62	58.5	-82.8	104.5	98.3	6.26	16.696		
1,700.0	1,681.2	1,687.6	1,685.3	4.5	3.2	-144.75	63.7	-87.4	123.3	116.7	6.62	18.637		
1,800.0	1,777.4	1,785.3	1,782.7	5.0	3.4	-148.52	68.9	-92.0	142.8	135.8	6.97	20.484		
1,900.0	1,873.7	1,883.0	1,880.2	5.5	3.6	-151.38	74.1	-96.7	162.8	155.4	7.33	22.210		
2,000.0	1,969.9	1,980.7	1,977.6	6.0	3.8	-153.61	79.3	-101.3	183.0	175.3	7.69	23.809		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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			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	-72.12	9.1	-28.2	29.7					
100.0	100.0	100.0	100.0	0.1	0.1	-72.12	9.1	-28.2	29.7	29.4	0.30	99.941		
200.0	200.0	200.0	200.0	0.3	0.3	-72.12	9.1	-28.2	29.7	29.0	0.65	45.919		
300.0	300.0	300.0	300.0	0.5	0.5	-72.12	9.1	-28.2	29.7	28.7	0.99	29.807		
400.0	400.0	400.0	400.0	0.7	0.7	-72.12	9.1	-28.2	29.7	28.3	1.34	22.065		
500.0	500.0	500.0	500.0	0.8	0.8	-72.12	9.1	-28.2	29.7	28.0	1.69	17.515 CC		
600.0	600.0	599.5	599.4	1.0	1.0	-58.80	10.3	-28.8	29.9	27.8	2.04	14.637 ES		
700.0	699.9	698.9	698.8	1.2	1.2	-59.88	13.7	-30.6	30.6	28.2	2.40	12.763		
800.0	799.7	798.3	798.0	1.4	1.4	-61.58	19.5	-33.6	31.8	29.1	2.77	11.486		
900.0	899.3	898.1	897.4	1.6	1.6	-64.38	27.1	-37.5	33.3	30.1	3.17	10.493		
1,000.0	998.6	998.0	996.9	1.9	1.8	-70.75	34.9	-41.5	34.0	30.4	3.62	9.395		
1,100.0	1,097.5	1,097.8	1,096.4	2.1	2.0	-80.98	42.8	-45.6	34.6	30.5	4.12	8.390		
1,200.0	1,196.1	1,197.4	1,195.6	2.4	2.2	-94.65	50.6	-49.6	36.4	31.7	4.67	7.790 SF		
1,300.0	1,294.2	1,296.8	1,294.6	2.8	2.5	-109.88	58.4	-53.6	40.8	35.6	5.18	7.877		
1,400.0	1,391.7	1,395.9	1,393.2	3.2	2.7	-124.02	66.1	-57.6	48.9	43.4	5.59	8.750		
1,500.0	1,488.6	1,494.5	1,491.5	3.6	2.9	-135.44	73.9	-61.6	61.0	55.1	5.92	10.311		
1,600.0	1,584.9	1,592.8	1,589.4	4.1	3.1	-143.96	81.6	-65.6	76.6	70.4	6.21	12.341		
1,700.0	1,681.2	1,691.0	1,687.2	4.5	3.4	-149.70	89.3	-69.6	93.5	87.0	6.50	14.384		
1,800.0	1,777.4	1,789.2	1,785.0	5.0	3.6	-153.66	97.0	-73.6	111.1	104.3	6.82	16.306		
1,900.0	1,873.7	1,887.3	1,882.8	5.5	3.8	-156.53	104.7	-77.5	129.1	122.0	7.14	18.083		
2,000.0	1,969.9	1,985.5	1,980.6	6.0	4.0	-158.70	112.4	-81.5	147.3	139.8	7.47	19.716		
2,100.0	2,066.2	2,083.7	2,078.4	6.5	4.3	-160.39	120.1	-85.5	165.7	157.8	7.81	21.214		
2,200.0	2,162.4	2,181.9	2,176.3	7.0	4.5	-161.75	127.8	-89.5	184.1	176.0	8.15	22.590		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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	-74.15	4.0	-14.1	14.7					
100.0	100.0	100.0	100.0	0.1	0.1	-74.15	4.0	-14.1	14.7	14.4	0.30	49.436		
200.0	200.0	200.0	200.0	0.3	0.3	-74.15	4.0	-14.1	14.7	14.0	0.65	22.714		
300.0	300.0	300.0	300.0	0.5	0.5	-74.15	4.0	-14.1	14.7	13.7	0.99	14.744		
400.0	400.0	400.0	400.0	0.7	0.7	-74.15	4.0	-14.1	14.7	13.3	1.34	10.914 CC, ES		
500.0	500.0	499.8	499.7	0.8	0.8	-70.15	5.2	-14.5	15.4	13.7	1.69	9.121		
600.0	600.0	599.4	599.4	1.0	1.0	-49.87	8.9	-15.8	17.3	15.2	2.05	8.437		
700.0	699.9	699.1	698.8	1.2	1.2	-45.09	15.1	-17.8	19.4	17.0	2.41	8.068		
800.0	799.7	798.6	797.9	1.4	1.4	-41.74	23.7	-20.7	21.8	19.0	2.78	7.853		
900.0	899.3	898.1	896.7	1.6	1.7	-39.48	34.8	-24.4	24.4	21.2	3.16	7.713		
1,000.0	998.6	997.9	995.5	1.9	1.9	-38.80	47.7	-28.7	26.5	23.0	3.56	7.459		
1,100.0	1,097.5	1,097.9	1,094.6	2.1	2.2	-41.55	60.8	-33.1	26.8	22.8	4.00	6.696		
1,200.0	1,196.1	1,197.8	1,193.6	2.4	2.5	-48.39	73.8	-37.5	25.3	20.8	4.55	5.568		
1,300.0	1,294.2	1,297.6	1,292.4	2.8	2.8	-61.37	86.9	-41.8	22.9	17.6	5.29	4.332		
1,400.0	1,391.7	1,397.3	1,391.1	3.2	3.1	-83.22	99.9	-46.2	21.4	15.2	6.19	3.453		
1,400.1	1,391.8	1,397.4	1,391.2	3.2	3.1	-83.25	99.9	-46.2	21.4	15.2	6.20	3.453 SF		
1,500.0	1,488.6	1,496.6	1,489.5	3.6	3.3	-110.68	112.9	-50.6	24.0	17.2	6.78	3.537		
1,600.0	1,584.9	1,595.7	1,587.7	4.1	3.6	-132.62	125.8	-54.9	32.2	25.3	6.83	4.706		
1,700.0	1,681.2	1,694.8	1,685.8	4.5	3.9	-144.96	138.8	-59.2	43.3	36.4	6.88	6.294		
1,800.0	1,777.4	1,793.8	1,783.9	5.0	4.2	-152.09	151.7	-63.6	55.6	48.6	7.04	7.903		
1,900.0	1,873.7	1,892.9	1,882.0	5.5	4.5	-156.59	164.7	-67.9	68.5	61.2	7.27	9.423		
2,000.0	1,969.9	1,992.0	1,980.1	6.0	4.8	-159.66	177.6	-72.2	81.6	74.1	7.54	10.827		
2,100.0	2,066.2	2,091.0	2,078.2	6.5	5.1	-161.87	190.6	-76.6	94.9	87.1	7.84	12.115		
2,200.0	2,162.4	2,190.1	2,176.3	7.0	5.4	-163.54	203.5	-80.9	108.3	100.2	8.15	13.296		
2,300.0	2,258.6	2,289.1	2,274.4	7.5	5.7	-164.84	216.5	-85.2	121.8	113.3	8.47	14.380		
2,400.0	2,354.9	2,388.2	2,372.5	8.0	5.9	-165.89	229.4	-89.6	135.3	126.5	8.80	15.377		
2,500.0	2,451.1	2,487.2	2,470.7	8.4	6.2	-166.74	242.4	-93.9	148.9	139.8	9.14	16.297		
2,600.0	2,547.4	2,586.3	2,568.8	8.9	6.5	-167.45	255.3	-98.2	162.5	153.0	9.48	17.147		
2,700.0	2,643.6	2,685.3	2,666.9	9.4	6.8	-168.05	268.3	-102.6	176.1	166.3	9.82	17.934		
2,800.0	2,739.8	2,784.4	2,765.0	9.9	7.1	-168.56	281.2	-106.9	189.8	179.6	10.17	18.667		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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		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	109.33	-10.2	29.1	30.8					
100.0	100.0	100.0	100.0	0.1	0.1	109.33	-10.2	29.1	30.8	0.30	103.820			
200.0	200.0	200.0	200.0	0.3	0.3	109.33	-10.2	29.1	30.8	0.65	47.701			
300.0	300.0	300.0	300.0	0.5	0.5	109.33	-10.2	29.1	30.8	0.99	30.964			
400.0	400.0	400.0	400.0	0.7	0.7	109.33	-10.2	29.1	30.8	1.34	22.921			
500.0	500.0	500.0	500.0	0.8	0.8	109.33	-10.2	29.1	30.8	1.69	18.195 CC			
600.0	600.0	600.4	600.4	1.0	1.0	122.97	-8.9	28.8	30.8	2.04	15.090			
700.0	699.9	700.8	700.7	1.2	1.2	122.79	-5.0	28.0	31.0	2.40	12.885			
800.0	799.7	801.2	800.9	1.4	1.4	122.49	1.4	26.7	31.2	2.78	11.209			
900.0	899.3	901.7	900.9	1.6	1.6	122.09	10.5	24.9	31.5	3.19	9.868			
1,000.0	998.6	1,002.1	1,000.6	1.9	1.9	121.57	22.1	22.5	31.8	3.64	8.753			
1,100.0	1,097.5	1,102.5	1,100.0	2.1	2.1	120.97	36.3	19.7	32.3	4.14	7.805			
1,200.0	1,196.1	1,202.9	1,198.9	2.4	2.4	120.27	53.0	16.3	32.8	4.70	6.985 ES			
1,300.0	1,294.2	1,303.2	1,297.3	2.8	2.8	119.55	72.2	12.4	33.5	5.33	6.281			
1,400.0	1,391.7	1,403.2	1,395.2	3.2	3.1	121.23	92.3	8.3	35.0	5.96	5.873			
1,500.0	1,488.6	1,503.1	1,493.0	3.6	3.5	126.07	112.3	4.3	38.1	6.53	5.835 SF			
1,600.0	1,584.9	1,602.9	1,590.6	4.1	3.9	132.51	132.4	0.2	42.9	6.97	6.151			
1,700.0	1,681.2	1,702.6	1,688.3	4.5	4.3	137.89	152.4	-3.8	48.3	7.36	6.566			
1,800.0	1,777.4	1,802.4	1,785.9	5.0	4.6	142.16	172.4	-7.9	54.2	7.73	7.003			
1,900.0	1,873.7	1,902.2	1,883.6	5.5	5.0	145.58	192.4	-11.9	60.2	8.09	7.440			
2,000.0	1,969.9	2,001.9	1,981.2	6.0	5.4	148.37	212.4	-16.0	66.4	8.45	7.867			
2,100.0	2,066.2	2,101.7	2,078.9	6.5	5.8	150.68	232.4	-20.0	72.8	8.80	8.277			
2,200.0	2,162.4	2,201.4	2,176.5	7.0	6.2	152.61	252.4	-24.0	79.3	9.14	8.668			
2,300.0	2,258.6	2,301.2	2,274.2	7.5	6.6	154.25	272.4	-28.1	85.8	9.49	9.037			
2,400.0	2,354.9	2,400.9	2,371.8	8.0	7.0	155.66	292.5	-32.1	92.4	9.84	9.387			
2,500.0	2,451.1	2,500.7	2,469.5	8.4	7.3	156.88	312.5	-36.2	99.0	10.19	9.716			
2,600.0	2,547.4	2,600.5	2,567.1	8.9	7.7	157.95	332.5	-40.2	105.7	10.54	10.026			
2,700.0	2,643.6	2,700.2	2,664.7	9.4	8.1	158.89	352.5	-44.3	112.4	10.90	10.318			
2,800.0	2,739.8	2,800.0	2,762.4	9.9	8.5	159.72	372.5	-48.3	119.2	11.25	10.593			
2,900.0	2,836.1	2,899.7	2,860.0	10.4	8.9	160.46	392.5	-52.4	125.9	11.60	10.852			
3,000.0	2,932.3	2,999.5	2,957.7	10.9	9.3	161.13	412.5	-56.4	132.7	11.96	11.097			
3,100.0	3,028.6	3,099.3	3,055.3	11.4	9.7	161.73	432.5	-60.5	139.5	12.31	11.329			
3,200.0	3,124.8	3,199.0	3,153.0	11.9	10.1	162.28	452.6	-64.5	146.3	12.67	11.547			
3,300.0	3,221.1	3,298.8	3,250.6	12.4	10.5	162.78	472.6	-68.6	153.1	13.03	11.755			
3,400.0	3,317.3	3,398.5	3,348.3	12.9	10.9	163.24	492.6	-72.6	160.0	13.39	11.951			
3,500.0	3,413.5	3,498.3	3,445.9	13.5	11.3	163.65	512.6	-76.7	166.8	13.75	12.137			
3,600.0	3,509.8	3,598.0	3,543.6	14.0	11.7	164.04	532.6	-80.7	173.7	14.10	12.314			
3,700.0	3,606.0	3,697.8	3,641.2	14.5	12.1	164.39	552.6	-84.8	180.5	14.46	12.482			
3,800.0	3,702.3	3,797.6	3,738.9	15.0	12.5	164.72	572.6	-88.8	187.4	14.82	12.642			
3,900.0	3,798.5	3,897.3	3,836.5	15.5	12.9	165.03	592.7	-92.9	194.3	15.18	12.795			

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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	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	108.83	-5.1	15.0	15.8					
100.0	100.0	100.0	100.0	0.1	0.1	108.83	-5.1	15.0	15.8	15.5	0.30	53.258		
200.0	200.0	200.0	200.0	0.3	0.3	108.83	-5.1	15.0	15.8	15.2	0.65	24.470		
300.0	300.0	300.0	300.0	0.5	0.5	108.83	-5.1	15.0	15.8	14.8	0.99	15.884		
400.0	400.0	400.2	400.2	0.7	0.7	104.57	-3.8	14.7	15.2	13.8	1.35	11.277		
500.0	500.0	500.2	500.2	0.8	0.9	89.87	0.0	13.9	13.9	12.2	1.70	8.138		
553.3	553.3	553.5	553.3	0.9	1.0	91.96	3.1	13.2	13.6	11.7	1.90	7.121 CC, ES		
600.0	600.0	600.1	599.8	1.0	1.1	81.74	6.4	12.5	13.8	11.7	2.08	6.633		
700.0	699.9	699.8	699.1	1.2	1.3	62.59	15.3	10.6	15.7	13.2	2.46	6.358 SF		
800.0	799.7	799.4	798.0	1.4	1.5	48.84	26.8	8.1	18.9	16.0	2.84	6.641		
900.0	899.3	898.9	896.5	1.6	1.8	39.63	40.7	5.1	22.9	19.7	3.22	7.109		
1,000.0	998.6	998.2	994.4	1.9	2.1	33.41	57.1	1.6	27.3	23.7	3.60	7.601		
1,100.0	1,097.5	1,097.4	1,091.6	2.1	2.5	29.09	76.0	-2.5	32.0	28.1	3.98	8.058		
1,200.0	1,196.1	1,196.5	1,188.3	2.4	2.9	26.00	97.3	-7.1	36.9	32.5	4.36	8.463		
1,300.0	1,294.2	1,295.4	1,284.2	2.8	3.3	23.73	121.0	-12.2	41.8	37.1	4.74	8.811		
1,400.0	1,391.7	1,394.2	1,379.3	3.2	3.8	22.03	147.1	-17.8	46.8	41.6	5.14	9.107		
1,500.0	1,488.6	1,492.9	1,473.6	3.6	4.3	20.73	175.5	-23.9	51.8	46.2	5.54	9.354		
1,600.0	1,584.9	1,591.4	1,567.0	4.1	4.9	19.65	206.3	-30.5	57.1	51.1	5.94	9.607		
1,700.0	1,681.2	1,691.0	1,660.8	4.5	5.5	18.43	238.9	-37.5	63.6	57.2	6.34	10.034		
1,800.0	1,777.4	1,790.8	1,754.9	5.0	6.1	17.43	271.5	-44.6	70.1	63.4	6.73	10.423		
1,900.0	1,873.7	1,890.6	1,848.9	5.5	6.7	16.60	304.1	-51.6	76.7	69.6	7.12	10.775		
2,000.0	1,969.9	1,990.4	1,943.0	6.0	7.3	15.90	336.7	-58.6	83.2	75.7	7.50	11.096		
2,100.0	2,066.2	2,090.2	2,037.0	6.5	7.9	15.30	369.3	-65.6	89.8	81.9	7.89	11.388		
2,200.0	2,162.4	2,189.9	2,131.0	7.0	8.5	14.79	401.9	-72.7	96.4	88.1	8.27	11.657		
2,300.0	2,258.6	2,289.7	2,225.1	7.5	9.1	14.34	434.6	-79.7	103.0	94.3	8.65	11.904		
2,400.0	2,354.9	2,389.5	2,319.1	8.0	9.7	13.94	467.2	-86.7	109.6	100.6	9.03	12.132		
2,500.0	2,451.1	2,489.3	2,413.1	8.4	10.3	13.59	499.8	-93.7	116.2	106.8	9.41	12.343		
2,600.0	2,547.4	2,589.1	2,507.2	8.9	10.9	13.28	532.4	-100.7	122.8	113.0	9.79	12.538		
2,700.0	2,643.6	2,688.8	2,601.2	9.4	11.5	13.00	565.0	-107.8	129.4	119.2	10.17	12.720		
2,800.0	2,739.8	2,788.6	2,695.2	9.9	12.1	12.75	597.7	-114.8	136.0	125.5	10.55	12.890		
2,900.0	2,836.1	2,888.4	2,789.3	10.4	12.7	12.52	630.3	-121.8	142.6	131.7	10.93	13.048		
3,000.0	2,932.3	2,988.2	2,883.3	10.9	13.3	12.31	662.9	-128.8	149.2	137.9	11.31	13.197		
3,100.0	3,028.6	3,088.0	2,977.3	11.4	13.9	12.12	695.5	-135.8	155.9	144.2	11.69	13.336		
3,200.0	3,124.8	3,187.7	3,071.4	11.9	14.5	11.94	728.1	-142.9	162.5	150.4	12.07	13.467		
3,300.0	3,221.1	3,287.5	3,165.4	12.4	15.1	11.78	760.7	-149.9	169.1	156.7	12.44	13.591		
3,400.0	3,317.3	3,387.3	3,259.5	12.9	15.7	11.63	793.4	-156.9	175.7	162.9	12.82	13.707		
3,500.0	3,413.5	3,487.1	3,353.5	13.5	16.3	11.49	826.0	-163.9	182.4	169.2	13.20	13.817		
3,600.0	3,509.8	3,586.9	3,447.5	14.0	16.9	11.36	858.6	-170.9	189.0	175.4	13.57	13.921		
3,700.0	3,606.0	3,686.6	3,541.6	14.5	17.5	11.24	891.2	-178.0	195.6	181.7	13.95	14.020		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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						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	-92.00	-1.1	-31.3	31.3					
100.0	100.0	100.0	100.0	0.1	0.1	-92.00	-1.1	-31.3	31.3	31.0	0.30	105.638		
200.0	200.0	200.0	200.0	0.3	0.3	-92.00	-1.1	-31.3	31.3	30.7	0.65	48.536		
300.0	300.0	300.0	300.0	0.5	0.5	-92.00	-1.1	-31.3	31.3	30.3	0.99	31.506		
400.0	400.0	400.0	400.0	0.7	0.7	-92.00	-1.1	-31.3	31.3	30.0	1.34	23.323 CC, ES		
500.0	500.0	499.2	499.2	0.8	0.8	-92.51	-1.4	-32.6	32.6	30.9	1.69	19.275		
600.0	600.0	598.2	598.1	1.0	1.0	-82.13	-2.4	-36.3	36.2	34.2	2.04	17.751		
700.0	699.9	696.9	696.6	1.2	1.2	-88.66	-4.1	-42.5	42.4	40.0	2.39	17.696 SF		
800.0	799.7	795.1	794.4	1.4	1.4	-96.17	-6.4	-51.0	51.7	49.0	2.76	18.748		
900.0	899.3	892.5	891.1	1.6	1.7	-103.06	-9.4	-61.9	64.8	61.6	3.14	20.607		
1,000.0	998.6	989.0	986.7	1.9	1.9	-108.70	-13.0	-75.1	81.7	78.1	3.56	22.979		
1,100.0	1,097.5	1,084.4	1,080.7	2.1	2.2	-113.09	-17.1	-90.3	102.5	98.5	4.00	25.615		
1,200.0	1,196.1	1,178.5	1,173.1	2.4	2.6	-116.42	-21.8	-107.6	127.0	122.5	4.48	28.331		
1,300.0	1,294.2	1,271.1	1,263.6	2.8	2.9	-118.94	-27.0	-126.8	155.2	150.2	5.00	31.006		
1,400.0	1,391.7	1,362.2	1,352.1	3.2	3.3	-120.84	-32.7	-147.7	186.8	181.3	5.57	33.567		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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			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	-84.96	4.0	-45.4	45.6					
100.0	100.0	100.0	100.0	0.1	0.1	-84.96	4.0	-45.4	45.6	45.3	0.30	153.724		
200.0	200.0	200.0	200.0	0.3	0.3	-84.96	4.0	-45.4	45.6	45.0	0.65	70.630		
300.0	300.0	300.0	300.0	0.5	0.5	-84.96	4.0	-45.4	45.6	44.6	0.99	45.848		
400.0	400.0	400.0	400.0	0.7	0.7	-84.96	4.0	-45.4	45.6	44.3	1.34	33.939 CC, ES		
500.0	500.0	498.8	498.8	0.8	0.8	-85.22	3.9	-46.7	46.9	45.2	1.69	27.726		
600.0	600.0	597.5	597.4	1.0	1.0	-73.59	3.6	-50.5	50.3	48.3	2.04	24.688		
700.0	699.9	695.9	695.6	1.2	1.2	-78.16	3.1	-56.9	55.8	53.4	2.39	23.339		
800.0	799.7	793.8	793.1	1.4	1.4	-84.07	2.4	-65.7	63.9	61.1	2.76	23.165 SF		
900.0	899.3	891.2	889.8	1.6	1.7	-90.23	1.5	-76.9	74.9	71.8	3.14	23.841		
1,000.0	998.6	987.7	985.4	1.9	1.9	-95.92	0.4	-90.4	89.4	85.8	3.56	25.096		
1,100.0	1,097.5	1,083.4	1,079.7	2.1	2.2	-100.78	-0.9	-106.2	107.4	103.3	4.02	26.693		
1,200.0	1,196.1	1,177.9	1,172.6	2.4	2.6	-104.77	-2.3	-124.1	128.8	124.3	4.53	28.449		
1,300.0	1,294.2	1,271.3	1,263.8	2.8	2.9	-107.98	-3.9	-144.1	153.6	148.6	5.08	30.234		
1,400.0	1,391.7	1,363.4	1,353.3	3.2	3.3	-110.52	-5.7	-165.9	181.8	176.1	5.69	31.969		

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 28-23D (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 28-23D (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							
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	-81.31	9.1	-59.5	60.2				
100.0	100.0	100.0	100.0	0.1	0.1	-81.31	9.1	-59.5	60.2	59.9	0.30	203.019	
200.0	200.0	200.0	200.0	0.3	0.3	-81.31	9.1	-59.5	60.2	59.6	0.65	93.279	
300.0	300.0	300.0	300.0	0.5	0.5	-81.31	9.1	-59.5	60.2	59.2	0.99	60.549	
400.0	400.0	400.0	400.0	0.7	0.7	-81.31	9.1	-59.5	60.2	58.9	1.34	44.822 CC, ES	
500.0	500.0	498.4	498.4	0.8	0.8	-81.34	9.3	-60.8	61.5	59.8	1.69	36.398	
600.0	600.0	596.7	596.6	1.0	1.0	-68.75	9.7	-64.6	64.9	62.9	2.04	31.858	
700.0	699.9	694.8	694.5	1.2	1.2	-71.67	10.5	-70.8	70.0	67.6	2.39	29.303	
800.0	799.7	792.5	791.8	1.4	1.4	-75.81	11.6	-79.5	77.2	74.4	2.75	28.021	
900.0	899.3	889.8	888.4	1.6	1.7	-80.55	12.9	-90.7	86.7	83.6	3.14	27.604 SF	
1,000.0	998.6	986.4	984.1	1.9	1.9	-85.33	14.6	-104.1	99.0	95.4	3.56	27.770	
1,100.0	1,097.5	1,082.3	1,078.7	2.1	2.2	-89.81	16.5	-119.9	114.2	110.1	4.03	28.301	
1,200.0	1,196.1	1,177.4	1,172.1	2.4	2.6	-93.78	18.7	-137.8	132.3	127.8	4.56	29.036	
1,300.0	1,294.2	1,271.6	1,264.0	2.8	2.9	-97.19	21.2	-157.8	153.5	148.3	5.14	29.860	
1,400.0	1,391.7	1,364.7	1,354.5	3.2	3.3	-100.06	23.9	-179.8	177.6	171.8	5.79	30.702	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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							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	-80.02	13.1	-74.5	75.6					
100.0	100.0	100.0	100.0	0.1	0.1	-80.02	13.1	-74.5	75.6	75.3	0.30	254.954	CC, ES	
200.0	200.0	200.0	200.0	0.3	0.3	-80.02	13.1	-74.5	75.6	75.0	0.65	117.141		
300.0	300.0	300.0	300.0	0.5	0.5	-80.02	13.1	-74.5	75.6	74.7	0.99	76.039		
400.0	400.0	400.0	400.0	0.7	0.7	-80.02	13.1	-74.5	75.6	74.3	1.34	56.289		
500.0	500.0	498.1	498.0	0.8	0.8	-79.90	13.5	-75.7	76.9	75.2	1.69	45.526		
600.0	600.0	596.0	595.9	1.0	1.0	-66.67	14.6	-79.3	80.2	78.2	2.04	39.397		
700.0	699.9	693.8	693.5	1.2	1.2	-68.42	16.4	-85.3	85.1	82.7	2.39	35.623		
800.0	799.7	791.2	790.5	1.4	1.4	-71.16	19.0	-93.6	91.6	88.9	2.75	33.285		
900.0	899.3	888.3	887.0	1.6	1.7	-74.52	22.3	-104.3	100.1	97.0	3.14	31.874		
1,000.0	998.6	985.0	982.7	1.9	1.9	-78.18	26.3	-117.2	110.8	107.2	3.57	31.067		
1,100.0	1,097.5	1,081.1	1,077.4	2.1	2.2	-81.84	31.0	-132.4	123.7	119.7	4.04	30.644		
1,200.0	1,196.1	1,176.5	1,171.2	2.4	2.6	-85.32	36.4	-149.6	139.2	134.6	4.57	30.456		
1,300.0	1,294.2	1,271.3	1,263.7	2.8	2.9	-88.49	42.3	-169.0	157.2	152.0	5.17	30.405	SF	
1,400.0	1,391.7	1,365.2	1,355.0	3.2	3.3	-91.31	49.0	-190.4	177.7	171.9	5.84	30.434		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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		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	-78.39	18.2	-88.6	90.5				
100.0	100.0	100.0	100.0	0.1	0.1	-78.39	18.2	-88.6	90.5	90.2	0.30	304.893	
200.0	200.0	200.0	200.0	0.3	0.3	-78.39	18.2	-88.6	90.5	89.8	0.65	140.086	
300.0	300.0	300.0	300.0	0.5	0.5	-78.39	18.2	-88.6	90.5	89.5	0.99	90.933	
400.0	400.0	400.0	400.0	0.7	0.7	-78.39	18.2	-88.6	90.5	89.1	1.34	67.314 CC, ES	
500.0	500.0	497.8	497.7	0.8	0.8	-78.16	18.8	-89.7	91.7	90.0	1.69	54.285	
600.0	600.0	595.4	595.3	1.0	1.0	-64.49	20.6	-93.0	94.8	92.8	2.04	46.575	
700.0	699.9	692.9	692.7	1.2	1.2	-65.40	23.5	-98.5	99.3	96.9	2.39	41.569	
800.0	799.7	790.2	789.6	1.4	1.4	-67.07	27.6	-106.2	105.1	102.4	2.75	38.174	
900.0	899.3	887.3	886.0	1.6	1.7	-69.28	32.9	-116.0	112.5	109.4	3.14	35.787	
1,000.0	998.6	984.0	981.7	1.9	1.9	-71.86	39.3	-127.9	121.5	118.0	3.57	34.045	
1,100.0	1,097.5	1,080.3	1,076.7	2.1	2.2	-74.61	46.8	-141.8	132.4	128.3	4.05	32.716	
1,200.0	1,196.1	1,176.2	1,170.8	2.4	2.6	-77.39	55.4	-157.8	145.1	140.5	4.58	31.655	
1,300.0	1,294.2	1,271.5	1,264.0	2.8	2.9	-80.09	65.1	-175.8	159.8	154.6	5.19	30.775	
1,400.0	1,391.7	1,366.4	1,356.1	3.2	3.3	-82.62	75.7	-195.7	176.5	170.6	5.88	30.029	
1,500.0	1,488.6	1,460.6	1,447.0	3.6	3.8	-84.95	87.4	-217.5	195.2	188.6	6.64	29.389 SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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					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	-72.28	27.3	-85.5	89.8				
100.0	100.0	100.0	100.0	0.1	0.1	-72.28	27.3	-85.5	89.8	89.5	0.30	302.538	
200.0	200.0	200.0	200.0	0.3	0.3	-72.28	27.3	-85.5	89.8	89.1	0.65	139.004	CC, ES
300.0	300.0	297.8	297.8	0.5	0.5	-72.06	28.0	-86.5	91.0	90.0	0.99	91.822	
400.0	400.0	395.4	395.3	0.7	0.7	-71.43	30.1	-89.6	94.7	93.3	1.34	70.872	
500.0	500.0	492.8	492.5	0.8	0.9	-70.48	33.6	-94.8	100.9	99.2	1.68	60.011	
600.0	600.0	589.9	589.2	1.0	1.1	-56.10	38.5	-102.0	108.8	106.8	2.03	53.563	
700.0	699.9	686.7	685.4	1.2	1.3	-56.22	44.7	-111.1	117.7	115.3	2.38	49.368	
800.0	799.7	783.2	780.9	1.4	1.6	-56.98	52.2	-122.3	127.7	124.9	2.75	46.409	
900.0	899.3	879.3	875.7	1.6	1.9	-58.21	61.1	-135.4	138.7	135.5	3.14	44.174	
1,000.0	998.6	975.0	969.7	1.9	2.3	-59.77	71.3	-150.4	150.8	147.2	3.56	42.355	
1,100.0	1,097.5	1,070.3	1,062.8	2.1	2.7	-61.55	82.7	-167.2	164.1	160.1	4.03	40.762	
1,200.0	1,196.1	1,165.0	1,154.8	2.4	3.1	-63.45	95.3	-185.9	178.8	174.2	4.55	39.286	
1,300.0	1,294.2	1,259.2	1,245.7	2.8	3.6	-65.40	109.2	-206.3	194.8	189.6	5.14	37.873	SF

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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 28-31D (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	-71.72	23.3	-70.6	74.3					
100.0	100.0	100.0	100.0	0.1	0.1	-71.72	23.3	-70.6	74.3	74.0	0.30	250.423		
200.0	200.0	200.0	200.0	0.3	0.3	-71.72	23.3	-70.6	74.3	73.7	0.65	115.059		
300.0	300.0	300.0	300.0	0.5	0.5	-71.72	23.3	-70.6	74.3	73.3	0.99	74.688 CC, ES		
400.0	400.0	398.2	398.2	0.7	0.7	-71.34	24.1	-71.5	75.5	74.1	1.34	56.299		
500.0	500.0	496.3	496.2	0.8	0.9	-70.29	26.6	-74.3	79.1	77.4	1.69	46.872		
600.0	600.0	594.2	593.9	1.0	1.0	-55.70	30.8	-79.1	84.3	82.3	2.04	41.395		
700.0	699.9	691.9	691.2	1.2	1.3	-55.67	36.5	-85.7	90.5	88.1	2.39	37.831		
800.0	799.7	789.4	788.1	1.4	1.5	-56.36	43.9	-94.1	97.6	94.9	2.76	35.349		
900.0	899.3	886.7	884.4	1.6	1.8	-57.58	52.9	-104.4	105.7	102.5	3.15	33.512		
1,000.0	998.6	983.6	980.0	1.9	2.1	-59.19	63.5	-116.5	114.8	111.2	3.58	32.054		
1,100.0	1,097.5	1,080.3	1,074.9	2.1	2.4	-61.06	75.6	-130.3	125.0	120.9	4.06	30.811		
1,200.0	1,196.1	1,176.6	1,168.9	2.4	2.8	-63.07	89.3	-145.9	136.3	131.7	4.59	29.688		
1,300.0	1,294.2	1,272.5	1,262.1	2.8	3.2	-65.14	104.4	-163.2	148.9	143.7	5.20	28.635		
1,400.0	1,391.7	1,368.1	1,354.2	3.2	3.7	-67.20	121.0	-182.2	162.7	156.8	5.89	27.636		
1,500.0	1,488.6	1,463.2	1,445.3	3.6	4.2	-69.20	139.0	-202.8	177.8	171.2	6.66	26.692		
1,600.0	1,584.9	1,557.9	1,535.3	4.1	4.8	-71.15	158.5	-225.0	194.4	186.9	7.51	25.874 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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			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	-72.12	18.2	-56.4	59.3					
100.0	100.0	100.0	100.0	0.1	0.1	-72.12	18.2	-56.4	59.3	59.0	0.30	199.881		
200.0	200.0	200.0	200.0	0.3	0.3	-72.12	18.2	-56.4	59.3	58.7	0.65	91.837 CC, ES		
300.0	300.0	298.6	298.6	0.5	0.5	-71.52	19.1	-57.3	60.4	59.4	0.99	60.884		
400.0	400.0	397.2	397.1	0.7	0.7	-69.87	21.9	-59.9	63.9	62.5	1.34	47.662		
500.0	500.0	495.4	495.1	0.8	0.9	-67.49	26.6	-64.2	69.7	68.0	1.69	41.297		
600.0	600.0	593.4	592.7	1.0	1.1	-51.73	33.1	-70.2	77.1	75.1	2.05	37.691		
700.0	699.9	691.1	689.7	1.2	1.4	-50.72	41.4	-77.8	85.4	83.0	2.41	35.479		
800.0	799.7	788.6	786.2	1.4	1.6	-50.52	51.5	-87.2	94.3	91.6	2.78	33.945		
900.0	899.3	885.7	882.1	1.6	2.0	-50.92	63.3	-98.1	104.0	100.8	3.17	32.778		
1,000.0	998.6	982.6	977.2	1.9	2.3	-51.74	76.9	-110.7	114.4	110.8	3.60	31.795		
1,100.0	1,097.5	1,079.2	1,071.5	2.1	2.7	-52.87	92.2	-124.8	125.6	121.5	4.07	30.884		
1,200.0	1,196.1	1,175.4	1,164.9	2.4	3.1	-54.20	109.2	-140.5	137.5	132.9	4.59	29.981		
1,300.0	1,294.2	1,271.3	1,257.3	2.8	3.6	-55.66	127.8	-157.7	150.3	145.1	5.17	29.057		
1,400.0	1,391.7	1,366.8	1,348.7	3.2	4.1	-57.19	148.1	-176.4	163.9	158.1	5.83	28.110		
1,500.0	1,488.6	1,461.9	1,439.1	3.6	4.7	-58.75	169.9	-196.6	178.4	171.9	6.57	27.151		
1,600.0	1,584.9	1,556.6	1,528.3	4.1	5.3	-60.32	193.3	-218.2	194.1	186.7	7.39	26.269 SF		

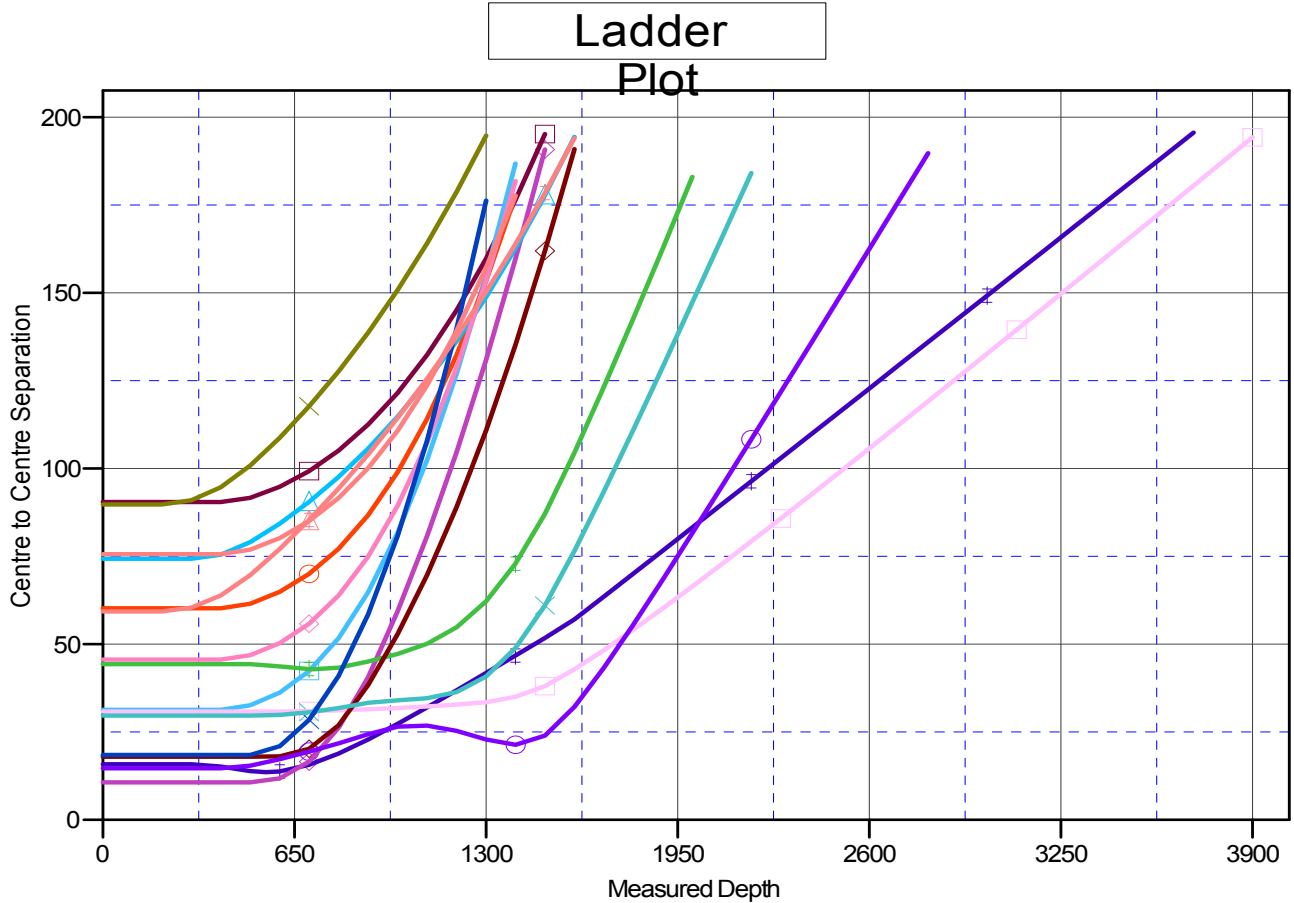
Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 28-23D (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 28-23D (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 28-23D (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 28-30D (F28 Pad), DD, Plan #1 V0	Oxy 28-26D (F28 Pad), DD, Plan #1 V0
Oxy 28-29D (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 28-25D (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 28-27D (F28 Pad), DD, Plan #1 V0	Oxy 28-18D (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 28-21D (F28 Pad), DD, Plan #1 V0	
Oxy 28-31D (F28 Pad), DD, Plan #1 V0	Oxy 28-20D (F28 Pad), DD, Plan #1 V0	