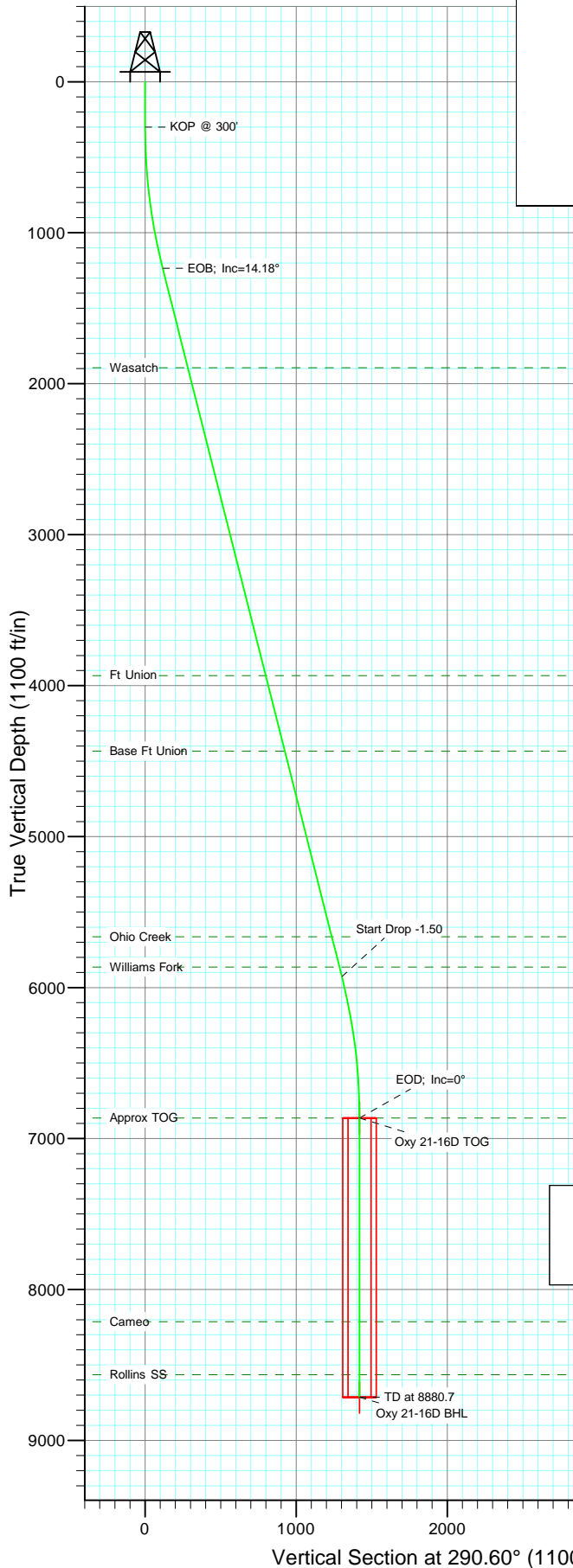


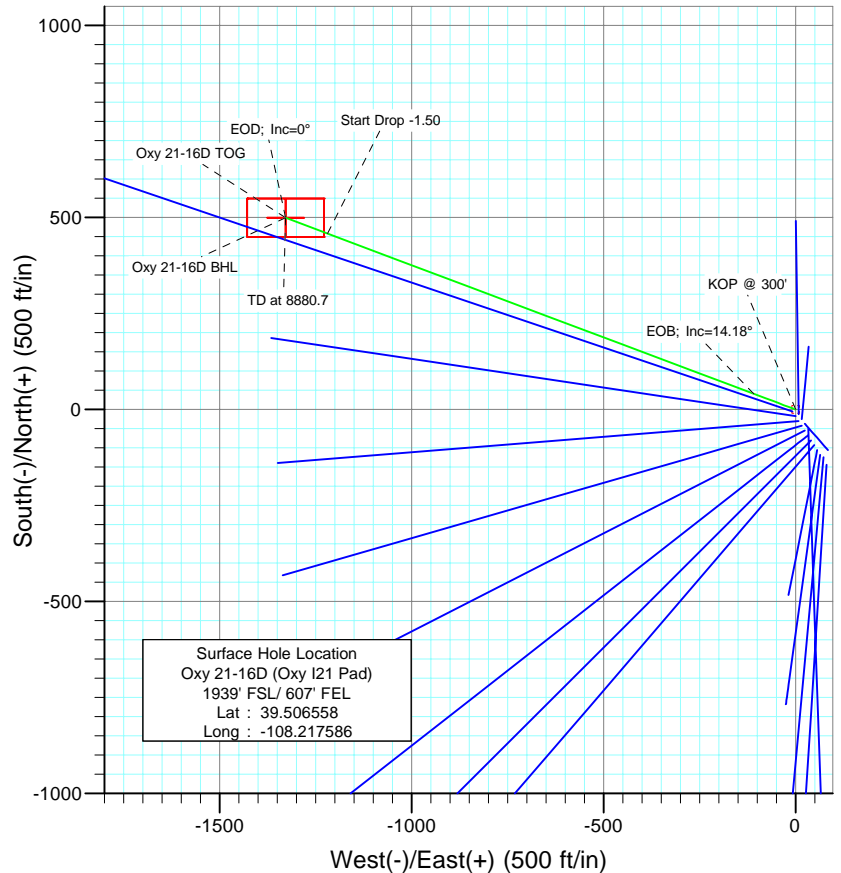


Berry Petroleum Company

Project: Garfield County
Site: NESE S21-T6S-R97W (Oxy I21 pad)
Well: Oxy 21-16D (Oxy I21 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	1245.4	14.18	290.60	1235.8	41.0	-109.0	1.50	290.60	116.4	
4	6085.3	14.18	290.60	5928.2	458.1	-1218.9	0.00	0.00	1302.1	
5	7030.7	0.00	0.00	6864.0	499.1	-1327.8	1.50	180.00	1418.5	Oxy 21-16D TOG
6	8880.7	0.00	0.00	8714.0	499.1	-1327.8	0.00	0.00	1418.5	Oxy 21-16D BHL



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1894.0	1924.3	Wasatch
3934.0	4028.4	Ft Union
4434.0	4544.1	Base Ft Union
5664.0	5812.8	Ohio Creek
5864.0	6019.1	Williams Fork
6864.0	7030.7	Approx TOG
8214.0	8380.7	Cameo
8564.0	8730.7	Rollins SS



Azimuths to True North
Magnetic North: 10.65°

Magnetic Field
Strength: 52405.2snT
Dip Angle: 65.76°
Date: 10/6/2009
Model: IGRF200510

DESIGN DETAILS: Plan #1

95XXX; BH
KBE @ 8381.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
Oxy 21-16D BHL	290.60	Slot	0.0	0.0	0.0

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-16D (Oxy I21 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		NESE S21-T6S-R97W (Oxy I21 pad)			
Site Position:		Northing:	1,620,717.92 ft	Latitude:	39.506164
From:	Lat/Long	Easting:	2,233,406.18 ft	Longitude:	-108.217300
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.71 °

Well	Oxy 21-16D (Oxy I21 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,620,863.77 ft	Latitude:	39.506558
	+E/-W	0.0 ft	Easting:	2,233,329.81 ft	Longitude:	-108.217586
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,366.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/6/2009	10.65	65.76	52,405

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	290.60

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,245.4	14.18	290.60	1,235.8	41.0	-109.0	1.50	1.50	0.00	290.60	
6,085.3	14.18	290.60	5,928.2	458.1	-1,218.9	0.00	0.00	0.00	0.00	
7,030.7	0.00	0.00	6,864.0	499.1	-1,327.8	1.50	-1.50	0.00	180.00	Oxy 21-16D TOG
8,880.7	0.00	0.00	8,714.0	499.1	-1,327.8	0.00	0.00	0.00	0.00	Oxy 21-16D BHL

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-16D (Oxy I21 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	290.60	330.0	0.0	-0.1	0.1	1.50	1.50	
360.0	0.90	290.60	360.0	0.2	-0.4	0.5	1.50	1.50	
390.0	1.35	290.60	390.0	0.4	-1.0	1.1	1.50	1.50	
420.0	1.80	290.60	420.0	0.7	-1.8	1.9	1.50	1.50	
450.0	2.25	290.60	450.0	1.0	-2.8	2.9	1.50	1.50	
480.0	2.70	290.60	479.9	1.5	-4.0	4.2	1.50	1.50	
510.0	3.15	290.60	509.9	2.0	-5.4	5.8	1.50	1.50	
540.0	3.60	290.60	539.8	2.7	-7.1	7.5	1.50	1.50	
570.0	4.05	290.60	569.8	3.4	-8.9	9.5	1.50	1.50	
600.0	4.50	290.60	599.7	4.1	-11.0	11.8	1.50	1.50	
630.0	4.95	290.60	629.6	5.0	-13.3	14.2	1.50	1.50	
660.0	5.40	290.60	659.5	6.0	-15.9	17.0	1.50	1.50	
690.0	5.85	290.60	689.3	7.0	-18.6	19.9	1.50	1.50	
720.0	6.30	290.60	719.2	8.1	-21.6	23.1	1.50	1.50	
750.0	6.75	290.60	749.0	9.3	-24.8	26.5	1.50	1.50	
780.0	7.20	290.60	778.7	10.6	-28.2	30.1	1.50	1.50	
810.0	7.65	290.60	808.5	12.0	-31.8	34.0	1.50	1.50	
840.0	8.10	290.60	838.2	13.4	-35.7	38.1	1.50	1.50	
870.0	8.55	290.60	867.9	14.9	-39.7	42.5	1.50	1.50	
900.0	9.00	290.60	897.5	16.5	-44.0	47.0	1.50	1.50	
930.0	9.45	290.60	927.1	18.2	-48.5	51.8	1.50	1.50	
960.0	9.90	290.60	956.7	20.0	-53.2	56.9	1.50	1.50	
990.0	10.35	290.60	986.3	21.9	-58.2	62.2	1.50	1.50	
1,020.0	10.80	290.60	1,015.7	23.8	-63.3	67.7	1.50	1.50	
1,050.0	11.25	290.60	1,045.2	25.8	-68.7	73.4	1.50	1.50	
1,080.0	11.70	290.60	1,074.6	27.9	-74.3	79.4	1.50	1.50	
1,110.0	12.15	290.60	1,103.9	30.1	-80.1	85.6	1.50	1.50	
1,140.0	12.60	290.60	1,133.2	32.4	-86.1	92.0	1.50	1.50	
1,170.0	13.05	290.60	1,162.5	34.7	-92.3	98.7	1.50	1.50	
1,200.0	13.50	290.60	1,191.7	37.1	-98.8	105.5	1.50	1.50	
1,230.0	13.95	290.60	1,220.8	39.6	-105.5	112.7	1.50	1.50	
1,245.4	14.18	290.60	1,235.8	41.0	-109.0	116.4	1.50	1.50	EOB; Inc=14.18°
1,260.0	14.18	290.60	1,249.9	42.2	-112.3	120.0	0.00	0.00	
1,290.0	14.18	290.60	1,279.0	44.8	-119.2	127.3	0.00	0.00	
1,320.0	14.18	290.60	1,308.1	47.4	-126.1	134.7	0.00	0.00	
1,350.0	14.18	290.60	1,337.2	50.0	-132.9	142.0	0.00	0.00	
1,380.0	14.18	290.60	1,366.3	52.6	-139.8	149.4	0.00	0.00	
1,410.0	14.18	290.60	1,395.4	55.1	-146.7	156.7	0.00	0.00	
1,440.0	14.18	290.60	1,424.4	57.7	-153.6	164.1	0.00	0.00	
1,470.0	14.18	290.60	1,453.5	60.3	-160.5	171.4	0.00	0.00	
1,500.0	14.18	290.60	1,482.6	62.9	-167.3	178.8	0.00	0.00	

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-16D (Oxy I21 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	14.18	290.60	1,511.7	65.5	-174.2	186.1	0.00	0.00	
1,560.0	14.18	290.60	1,540.8	68.1	-181.1	193.5	0.00	0.00	
1,590.0	14.18	290.60	1,569.9	70.7	-188.0	200.8	0.00	0.00	
1,620.0	14.18	290.60	1,599.0	73.2	-194.9	208.2	0.00	0.00	
1,650.0	14.18	290.60	1,628.0	75.8	-201.7	215.5	0.00	0.00	
1,680.0	14.18	290.60	1,657.1	78.4	-208.6	222.9	0.00	0.00	
1,710.0	14.18	290.60	1,686.2	81.0	-215.5	230.2	0.00	0.00	
1,740.0	14.18	290.60	1,715.3	83.6	-222.4	237.6	0.00	0.00	
1,770.0	14.18	290.60	1,744.4	86.2	-229.3	244.9	0.00	0.00	
1,800.0	14.18	290.60	1,773.5	88.8	-236.1	252.3	0.00	0.00	
1,830.0	14.18	290.60	1,802.6	91.3	-243.0	259.6	0.00	0.00	
1,860.0	14.18	290.60	1,831.6	93.9	-249.9	267.0	0.00	0.00	
1,890.0	14.18	290.60	1,860.7	96.5	-256.8	274.3	0.00	0.00	
1,920.0	14.18	290.60	1,889.8	99.1	-263.7	281.7	0.00	0.00	
1,924.3	14.18	290.60	1,894.0	99.5	-264.6	282.7	0.00	0.00	Wasatch
1,950.0	14.18	290.60	1,918.9	101.7	-270.5	289.0	0.00	0.00	
1,980.0	14.18	290.60	1,948.0	104.3	-277.4	296.4	0.00	0.00	
2,010.0	14.18	290.60	1,977.1	106.9	-284.3	303.7	0.00	0.00	
2,040.0	14.18	290.60	2,006.2	109.4	-291.2	311.1	0.00	0.00	
2,070.0	14.18	290.60	2,035.2	112.0	-298.1	318.4	0.00	0.00	
2,100.0	14.18	290.60	2,064.3	114.6	-304.9	325.8	0.00	0.00	
2,130.0	14.18	290.60	2,093.4	117.2	-311.8	333.1	0.00	0.00	
2,160.0	14.18	290.60	2,122.5	119.8	-318.7	340.5	0.00	0.00	
2,190.0	14.18	290.60	2,151.6	122.4	-325.6	347.8	0.00	0.00	
2,220.0	14.18	290.60	2,180.7	125.0	-332.5	355.2	0.00	0.00	
2,250.0	14.18	290.60	2,209.8	127.5	-339.3	362.5	0.00	0.00	
2,280.0	14.18	290.60	2,238.9	130.1	-346.2	369.9	0.00	0.00	
2,310.0	14.18	290.60	2,267.9	132.7	-353.1	377.2	0.00	0.00	
2,340.0	14.18	290.60	2,297.0	135.3	-360.0	384.6	0.00	0.00	
2,370.0	14.18	290.60	2,326.1	137.9	-366.9	391.9	0.00	0.00	
2,400.0	14.18	290.60	2,355.2	140.5	-373.7	399.3	0.00	0.00	
2,430.0	14.18	290.60	2,384.3	143.1	-380.6	406.6	0.00	0.00	
2,460.0	14.18	290.60	2,413.4	145.6	-387.5	414.0	0.00	0.00	
2,490.0	14.18	290.60	2,442.5	148.2	-394.4	421.3	0.00	0.00	

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Oxy 21-16D TOG	0.00	0.00	6,864.0	499.1	-1,327.8	1,621,402.32	2,232,017.52	39.507928	-108.222292
- plan misses target center by 4532.6ft at 2490.0ft MD (2442.5 TVD, 148.2 N, -394.4 E)									
- Point									
Oxy 21-16D BHL	0.00	0.00	8,714.0	499.1	-1,327.8	1,621,402.32	2,232,017.52	39.507928	-108.222292
- plan misses target center by 6350.3ft at 2490.0ft MD (2442.5 TVD, 148.2 N, -394.4 E)									
- Rectangle (sides W100.0 H200.0 D0.0)									

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-16D (Oxy I21 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	14.18	290.60	2,452.1	149.1	-396.7	423.8	0.00	0.00	
2,600.0	14.18	290.60	2,549.1	157.7	-419.6	448.3	0.00	0.00	
2,700.0	14.18	290.60	2,646.1	166.3	-442.5	472.8	0.00	0.00	
2,800.0	14.18	290.60	2,743.0	174.9	-465.5	497.3	0.00	0.00	
2,900.0	14.18	290.60	2,840.0	183.6	-488.4	521.7	0.00	0.00	
3,000.0	14.18	290.60	2,936.9	192.2	-511.3	546.2	0.00	0.00	
3,100.0	14.18	290.60	3,033.9	200.8	-534.3	570.7	0.00	0.00	
3,200.0	14.18	290.60	3,130.8	209.4	-557.2	595.2	0.00	0.00	
3,300.0	14.18	290.60	3,227.8	218.0	-580.1	619.7	0.00	0.00	
3,400.0	14.18	290.60	3,324.7	226.7	-603.1	644.2	0.00	0.00	
3,500.0	14.18	290.60	3,421.7	235.3	-626.0	668.7	0.00	0.00	
3,600.0	14.18	290.60	3,518.6	243.9	-648.9	693.2	0.00	0.00	
3,700.0	14.18	290.60	3,615.6	252.5	-671.8	717.7	0.00	0.00	
3,800.0	14.18	290.60	3,712.5	261.1	-694.8	742.2	0.00	0.00	
3,900.0	14.18	290.60	3,809.5	269.8	-717.7	766.7	0.00	0.00	
4,000.0	14.18	290.60	3,906.4	278.4	-740.6	791.2	0.00	0.00	
4,028.4	14.18	290.60	3,934.0	280.8	-747.2	798.2	0.00	0.00	Ft Union
4,100.0	14.18	290.60	4,003.4	287.0	-763.6	815.7	0.00	0.00	
4,200.0	14.18	290.60	4,100.3	295.6	-786.5	840.2	0.00	0.00	
4,300.0	14.18	290.60	4,197.3	304.2	-809.4	864.7	0.00	0.00	
4,400.0	14.18	290.60	4,294.2	312.8	-832.4	889.2	0.00	0.00	
4,500.0	14.18	290.60	4,391.2	321.5	-855.3	913.7	0.00	0.00	
4,544.1	14.18	290.60	4,434.0	325.3	-865.4	924.5	0.00	0.00	Base Ft Union
4,600.0	14.18	290.60	4,488.2	330.1	-878.2	938.2	0.00	0.00	
4,700.0	14.18	290.60	4,585.1	338.7	-901.2	962.7	0.00	0.00	
4,800.0	14.18	290.60	4,682.1	347.3	-924.1	987.2	0.00	0.00	
4,900.0	14.18	290.60	4,779.0	355.9	-947.0	1,011.7	0.00	0.00	
5,000.0	14.18	290.60	4,876.0	364.6	-970.0	1,036.2	0.00	0.00	
5,100.0	14.18	290.60	4,972.9	373.2	-992.9	1,060.7	0.00	0.00	
5,200.0	14.18	290.60	5,069.9	381.8	-1,015.8	1,085.2	0.00	0.00	
5,300.0	14.18	290.60	5,166.8	390.4	-1,038.8	1,109.7	0.00	0.00	
5,400.0	14.18	290.60	5,263.8	399.0	-1,061.7	1,134.2	0.00	0.00	
5,500.0	14.18	290.60	5,360.7	407.7	-1,084.6	1,158.7	0.00	0.00	
5,600.0	14.18	290.60	5,457.7	416.3	-1,107.6	1,183.2	0.00	0.00	
5,700.0	14.18	290.60	5,554.6	424.9	-1,130.5	1,207.7	0.00	0.00	
5,800.0	14.18	290.60	5,651.6	433.5	-1,153.4	1,232.2	0.00	0.00	
5,812.8	14.18	290.60	5,664.0	434.6	-1,156.4	1,235.3	0.00	0.00	Ohio Creek
5,900.0	14.18	290.60	5,748.5	442.1	-1,176.4	1,256.7	0.00	0.00	
6,000.0	14.18	290.60	5,845.5	450.7	-1,199.3	1,281.2	0.00	0.00	
6,019.1	14.18	290.60	5,864.0	452.4	-1,203.7	1,285.9	0.00	0.00	Williams Fork
6,085.3	14.18	290.60	5,928.2	458.1	-1,218.9	1,302.1	0.00	0.00	Start Drop -1.50
6,100.0	13.96	290.60	5,942.5	459.4	-1,222.2	1,305.7	1.50	-1.50	
6,200.0	12.46	290.60	6,039.8	467.4	-1,243.6	1,328.5	1.50	-1.50	
6,300.0	10.96	290.60	6,137.7	474.5	-1,262.6	1,348.8	1.50	-1.50	
6,400.0	9.46	290.60	6,236.1	480.8	-1,279.2	1,366.5	1.50	-1.50	
6,500.0	7.96	290.60	6,335.0	486.1	-1,293.4	1,381.7	1.50	-1.50	
6,600.0	6.46	290.60	6,434.2	490.5	-1,305.1	1,394.2	1.50	-1.50	
6,700.0	4.96	290.60	6,533.7	494.0	-1,314.4	1,404.2	1.50	-1.50	
6,800.0	3.46	290.60	6,633.4	496.6	-1,321.3	1,411.5	1.50	-1.50	
6,900.0	1.96	290.60	6,733.3	498.3	-1,325.7	1,416.3	1.50	-1.50	
7,000.0	0.46	290.60	6,833.3	499.0	-1,327.7	1,418.4	1.50	-1.50	
7,030.7	0.00	0.00	6,864.0	499.1	-1,327.8	1,418.5	1.50	-1.50	EOD; Inc=0° - Approx TOG - Oxy 21-16D TOG

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-16D (Oxy I21 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	6,933.3	499.1	-1,327.8	1,418.5	0.00	0.00	
7,200.0	0.00	0.00	7,033.3	499.1	-1,327.8	1,418.5	0.00	0.00	
7,300.0	0.00	0.00	7,133.3	499.1	-1,327.8	1,418.5	0.00	0.00	
7,400.0	0.00	0.00	7,233.3	499.1	-1,327.8	1,418.5	0.00	0.00	
7,500.0	0.00	0.00	7,333.3	499.1	-1,327.8	1,418.5	0.00	0.00	
7,600.0	0.00	0.00	7,433.3	499.1	-1,327.8	1,418.5	0.00	0.00	
7,700.0	0.00	0.00	7,533.3	499.1	-1,327.8	1,418.5	0.00	0.00	
7,800.0	0.00	0.00	7,633.3	499.1	-1,327.8	1,418.5	0.00	0.00	
7,900.0	0.00	0.00	7,733.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,000.0	0.00	0.00	7,833.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,100.0	0.00	0.00	7,933.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,200.0	0.00	0.00	8,033.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,300.0	0.00	0.00	8,133.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,380.7	0.00	0.00	8,214.0	499.1	-1,327.8	1,418.5	0.00	0.00	Cameo
8,400.0	0.00	0.00	8,233.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,500.0	0.00	0.00	8,333.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,600.0	0.00	0.00	8,433.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,700.0	0.00	0.00	8,533.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,730.7	0.00	0.00	8,564.0	499.1	-1,327.8	1,418.5	0.00	0.00	Rollins SS
8,800.0	0.00	0.00	8,633.3	499.1	-1,327.8	1,418.5	0.00	0.00	
8,880.7	0.00	0.00	8,714.0	499.1	-1,327.8	1,418.5	0.00	0.00	TD at 8880.7 - Oxy 21-16D BHL

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 21-16D TOG	0.00	0.00	6,864.0	499.1	-1,327.8	1,621,402.32	2,232,017.52	39.507928	-108.222292
- plan hits target center									
- Point									
Oxy 21-16D BHL	0.00	0.00	8,714.0	499.1	-1,327.8	1,621,402.32	2,232,017.52	39.507928	-108.222292
- plan hits target center									
- Rectangle (sides W100.0 H200.0 D0.0)									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,924.3	1,894.0	Wasatch		0.00	
4,028.4	3,934.0	Ft Union		0.00	
4,544.1	4,434.0	Base Ft Union		0.00	
5,812.8	5,664.0	Ohio Creek		0.00	
6,019.1	5,864.0	Williams Fork		0.00	
7,030.7	6,864.0	Approx TOG		0.00	
8,380.7	8,214.0	Cameo		0.00	
8,730.7	8,564.0	Rollins SS		0.00	

Planning Report

Database:	EDM 2003.21 US Multi User DB	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Company:	Berry Petroleum Company (NAD 83)	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Project:	Garfield County	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site:	NESE S21-T6S-R97W (Oxy I21 pad)	North Reference:	True
Well:	Oxy 21-16D (Oxy I21 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'
1,245.4	1,235.8	41.0	-109.0	EOB; Inc=14.18°
6,085.3	5,928.2	458.1	-1,218.9	Start Drop -1.50
7,030.7	6,864.0	499.1	-1,327.8	EOD; Inc=0°
8,880.7	8,714.0	499.1	-1,327.8	TD at 8880.7

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 1,111.9ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	10/7/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	8,880.7	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
Offset Well - Wellbore - Design						
NESE S21-T6S-R97W (Oxy I21 pad)						
Oxy 21-10D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	90.2	89.6	139.745	CC, ES
Oxy 21-10D (Oxy I21 Pad) - DD - Plan #1	4,000.0	3,812.9	1,103.5	1,074.1	37.487	SF
Oxy 21-11D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	75.0	74.0	75.386	CC, ES
Oxy 21-11D (Oxy I21 Pad) - DD - Plan #1	4,700.0	4,551.5	1,103.4	1,067.8	30.954	SF
Oxy 21-12D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	59.8	58.8	60.093	CC, ES
Oxy 21-12D (Oxy I21 Pad) - DD - Plan #1	5,800.0	5,685.8	1,107.7	1,061.2	23.825	SF
Oxy 21-13D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	45.3	44.3	45.546	CC, ES
Oxy 21-13D (Oxy I21 Pad) - DD - Plan #1	8,880.7	8,863.4	931.2	874.2	16.336	SF
Oxy 21-14D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	31.2	30.3	31.409	CC, ES
Oxy 21-14D (Oxy I21 Pad) - DD - Plan #1	8,880.7	8,857.1	638.9	581.7	11.167	SF
Oxy 21-15D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	17.1	16.1	17.208	CC
Oxy 21-15D (Oxy I21 Pad) - DD - Plan #1	400.0	400.1	17.4	16.0	12.909	ES
Oxy 21-15D (Oxy I21 Pad) - DD - Plan #1	8,880.7	8,866.7	315.2	257.0	5.417	SF
Oxy 21-17D (Oxy I21 pad) - DD - Plan #1	200.0	200.0	9.4	8.8	14.561	CC, ES
Oxy 21-17D (Oxy I21 pad) - DD - Plan #1	1,300.0	1,294.2	35.2	30.3	7.249	SF
Oxy 21-1D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	164.6	163.6	165.494	CC, ES
Oxy 21-1D (Oxy I21 Pad) - DD - Plan #1	3,000.0	2,756.0	1,073.3	1,058.2	70.922	SF
Oxy 21-2D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	60.4	59.8	93.596	CC, ES
Oxy 21-2D (Oxy I21 Pad) - DD - Plan #1	600.0	592.5	87.6	85.5	42.480	SF
Oxy 21-3D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	144.0	143.0	144.715	CC, ES
Oxy 21-3D (Oxy I21 Pad) - DD - Plan #1	1,100.0	1,069.0	246.3	242.3	61.621	SF
Oxy 21-4D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	134.7	133.7	135.429	CC, ES
Oxy 21-4D (Oxy I21 Pad) - DD - Plan #1	1,000.0	982.5	201.3	197.8	56.721	SF
Oxy 21-5D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	120.1	119.1	120.704	CC, ES
Oxy 21-5D (Oxy I21 Pad) - DD - Plan #1	1,000.0	987.5	185.1	181.5	52.092	SF
Oxy 21-6D (Oxy I21 Pad) - DD - Plan #1	200.0	500.0	44.4	43.7	68.716	CC, ES
Oxy 21-6D (Oxy I21 Pad) - DD - Plan #1	500.0	795.9	60.2	58.5	35.677	SF
Oxy 21-7D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	30.0	29.0	30.147	CC, ES
Oxy 21-7D (Oxy I21 Pad) - DD - Plan #1	700.0	700.6	45.5	43.1	18.980	SF
Oxy 21-8D (Oxy I21 Pad) - DD - Plan #1	300.0	300.0	14.7	13.7	14.778	CC, ES
Oxy 21-8D (Oxy I21 Pad) - DD - Plan #1	500.0	499.9	19.3	17.6	11.368	SF
Oxy 21-9D (Oxy I21 Pad) - DD - Plan #1	200.0	200.0	104.8	104.2	162.281	CC, ES
Oxy 21-9D (Oxy I21 Pad) - DD - Plan #1	1,700.0	1,622.2	392.4	383.0	41.890	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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-10D (Oxy I21 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)		Between Centres (ft)	Between Ellipses (ft)				Measured Depth (ft)	Vertical Depth (ft)	Offset (ft)
0.0	0.0	0.0	0.0	0.0	0.0	153.64	-80.9	40.1	90.2					
100.0	100.0	100.0	100.0	0.1	0.1	153.64	-80.9	40.1	90.2	89.9	0.30	304.152		
200.0	200.0	200.0	200.0	0.3	0.3	153.64	-80.9	40.1	90.2	89.6	0.65	139.745	CC, ES	
300.0	300.0	299.2	299.2	0.5	0.5	154.41	-81.8	39.2	90.7	89.7	0.99	91.259		
400.0	400.0	398.3	398.3	0.7	0.7	-134.47	-84.5	36.4	92.9	91.6	1.35	68.670		
500.0	499.9	497.2	496.9	0.9	0.9	-132.53	-89.0	31.9	98.1	96.4	1.73	56.713		
600.0	599.7	595.8	595.1	1.1	1.1	-130.56	-95.3	25.6	106.1	104.0	2.13	49.752		
700.0	699.3	693.9	692.5	1.3	1.4	-128.69	-103.4	17.5	117.0	114.4	2.57	45.498		
800.0	798.6	791.4	789.1	1.5	1.6	-127.01	-113.2	7.7	130.8	127.7	3.05	42.816		
900.0	897.5	888.3	884.6	1.8	2.0	-125.56	-124.6	-3.7	147.3	143.7	3.59	41.088		
1,000.0	996.1	984.4	978.9	2.1	2.3	-124.33	-137.6	-16.7	166.7	162.5	4.17	39.955		
1,100.0	1,094.2	1,079.6	1,071.9	2.5	2.7	-123.29	-152.1	-31.3	188.8	183.9	4.82	39.202		
1,200.0	1,191.7	1,173.9	1,163.4	2.9	3.1	-122.41	-168.1	-47.3	213.5	208.0	5.52	38.695		
1,300.0	1,288.7	1,267.2	1,253.4	3.4	3.6	-121.78	-185.5	-64.7	240.7	234.4	6.27	38.376		
1,400.0	1,385.7	1,359.6	1,341.9	3.8	4.1	-121.03	-204.3	-83.5	269.2	262.2	7.06	38.126		
1,500.0	1,482.6	1,451.2	1,428.9	4.3	4.6	-120.06	-224.4	-103.6	299.1	291.2	7.88	37.961		
1,600.0	1,579.6	1,542.4	1,515.0	4.7	5.2	-118.94	-245.8	-125.1	330.4	321.6	8.71	37.910		
1,700.0	1,676.5	1,637.0	1,603.9	5.2	5.8	-117.86	-268.6	-147.9	362.2	352.6	9.57	37.837		
1,800.0	1,773.5	1,731.6	1,692.9	5.6	6.3	-116.96	-291.4	-170.7	394.1	383.6	10.43	37.779		
1,900.0	1,870.4	1,826.3	1,781.8	6.1	6.9	-116.19	-314.2	-193.5	426.1	414.8	11.29	37.731		
2,000.0	1,967.4	1,920.9	1,870.7	6.6	7.5	-115.53	-337.0	-216.4	458.1	446.0	12.15	37.692		
2,100.0	2,064.3	2,015.5	1,959.7	7.0	8.1	-114.95	-359.8	-239.2	490.2	477.2	13.02	37.660		
2,200.0	2,161.3	2,110.1	2,048.6	7.5	8.7	-114.45	-382.5	-262.0	522.3	508.5	13.88	37.634		
2,300.0	2,258.2	2,204.7	2,137.6	8.0	9.3	-114.00	-405.3	-284.8	554.5	539.8	14.74	37.611		
2,400.0	2,355.2	2,299.3	2,226.5	8.4	9.9	-113.61	-428.1	-307.6	586.7	571.1	15.61	37.593		
2,500.0	2,452.1	2,393.9	2,315.4	8.9	10.5	-113.25	-450.9	-330.4	618.9	602.4	16.47	37.577		
2,600.0	2,549.1	2,488.5	2,404.4	9.4	11.1	-112.93	-473.7	-353.2	651.1	633.8	17.33	37.563		
2,700.0	2,646.1	2,583.1	2,493.3	9.8	11.7	-112.64	-496.5	-376.0	683.4	665.2	18.20	37.552		
2,800.0	2,743.0	2,677.7	2,582.3	10.3	12.3	-112.38	-519.2	-398.8	715.7	696.6	19.06	37.542		
2,900.0	2,840.0	2,772.3	2,671.2	10.8	12.9	-112.13	-542.0	-421.7	747.9	728.0	19.93	37.533		
3,000.0	2,936.9	2,866.9	2,760.1	11.2	13.5	-111.91	-564.8	-444.5	780.2	759.4	20.79	37.526		
3,100.0	3,033.9	2,961.5	2,849.1	11.7	14.1	-111.71	-587.6	-467.3	812.5	790.9	21.66	37.519		
3,200.0	3,130.8	3,056.1	2,938.0	12.2	14.7	-111.52	-610.4	-490.1	844.8	822.3	22.52	37.514		
3,300.0	3,227.8	3,150.7	3,027.0	12.7	15.3	-111.35	-633.2	-512.9	877.2	853.8	23.39	37.509		
3,400.0	3,324.7	3,245.3	3,115.9	13.1	15.9	-111.18	-656.0	-535.7	909.5	885.2	24.25	37.504		
3,500.0	3,421.7	3,339.9	3,204.8	13.6	16.5	-111.03	-678.7	-558.5	941.8	916.7	25.11	37.500		
3,600.0	3,518.6	3,434.5	3,293.8	14.1	17.1	-110.89	-701.5	-581.3	974.1	948.2	25.98	37.497		
3,700.0	3,615.6	3,529.1	3,382.7	14.5	17.7	-110.76	-724.3	-604.1	1,006.5	979.6	26.84	37.494		
3,800.0	3,712.5	3,623.7	3,471.6	15.0	18.3	-110.64	-747.1	-627.0	1,038.8	1,011.1	27.71	37.492		
3,900.0	3,809.5	3,718.3	3,560.6	15.5	18.9	-110.52	-769.9	-649.8	1,071.2	1,042.6	28.57	37.489		
4,000.0	3,906.4	3,812.9	3,649.5	15.9	19.5	-110.41	-792.7	-672.6	1,103.5	1,074.1	29.44	37.487	SF	

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-11D (Oxy I21 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	154.60	-67.7	32.2	75.0							
100.0	100.0	100.0	100.0	0.1	0.1	154.60	-67.7	32.2	75.0	74.7	0.30	252.766				
200.0	200.0	200.0	200.0	0.3	0.3	154.60	-67.7	32.2	75.0	74.4	0.65	116.136				
300.0	300.0	300.0	300.0	0.5	0.5	154.60	-67.7	32.2	75.0	74.0	0.99	75.386 CC, ES				
400.0	400.0	399.6	399.5	0.7	0.7	-135.71	-68.5	31.1	76.2	74.9	1.35	56.664				
500.0	499.9	499.0	498.9	0.9	0.9	-134.91	-70.9	28.1	79.9	78.2	1.71	46.833				
600.0	599.7	598.3	598.0	1.1	1.1	-133.73	-74.9	23.0	86.1	84.0	2.09	41.199				
700.0	699.3	697.3	696.5	1.3	1.3	-132.32	-80.5	15.9	94.8	92.3	2.51	37.816				
800.0	798.6	795.8	794.5	1.5	1.5	-130.84	-87.6	6.9	106.0	103.0	2.97	35.728				
900.0	897.5	894.0	891.6	1.8	1.8	-129.40	-96.2	-4.1	119.7	116.2	3.48	34.418				
1,000.0	996.1	991.5	987.7	2.1	2.1	-128.04	-106.2	-17.0	135.9	131.9	4.05	33.583				
1,100.0	1,094.2	1,088.4	1,082.8	2.5	2.5	-126.81	-117.7	-31.7	154.7	150.0	4.68	33.047				
1,200.0	1,191.7	1,184.6	1,176.7	2.9	2.9	-125.69	-130.6	-48.1	175.9	170.5	5.38	32.699				
1,300.0	1,288.7	1,280.0	1,269.3	3.4	3.3	-124.77	-144.8	-66.3	199.3	193.1	6.13	32.487				
1,400.0	1,385.7	1,374.8	1,360.7	3.8	3.7	-123.63	-160.4	-86.1	223.8	216.9	6.94	32.267				
1,500.0	1,482.6	1,469.1	1,451.0	4.3	4.2	-122.21	-177.2	-107.6	249.4	241.6	7.77	32.103				
1,600.0	1,579.6	1,565.5	1,542.9	4.7	4.8	-120.84	-194.9	-130.3	275.6	267.0	8.63	31.946				
1,700.0	1,676.5	1,661.8	1,634.8	5.2	5.3	-119.71	-212.7	-153.0	301.9	292.4	9.49	31.818				
1,800.0	1,773.5	1,758.1	1,726.7	5.6	5.8	-118.75	-230.5	-175.7	328.3	317.9	10.35	31.710				
1,900.0	1,870.4	1,854.4	1,818.6	6.1	6.3	-117.94	-248.2	-198.4	354.7	343.5	11.22	31.618				
2,000.0	1,967.4	1,950.8	1,910.5	6.6	6.9	-117.24	-266.0	-221.1	381.2	369.1	12.09	31.541				
2,100.0	2,064.3	2,047.1	2,002.4	7.0	7.4	-116.64	-283.8	-243.8	407.8	394.8	12.96	31.475				
2,200.0	2,161.3	2,143.4	2,094.4	7.5	7.9	-116.10	-301.5	-266.4	434.4	420.5	13.83	31.417				
2,300.0	2,258.2	2,239.7	2,186.3	8.0	8.5	-115.63	-319.3	-289.1	461.0	446.3	14.70	31.368				
2,400.0	2,355.2	2,336.1	2,278.2	8.4	9.0	-115.21	-337.1	-311.8	487.6	472.1	15.57	31.324				
2,500.0	2,452.1	2,432.4	2,370.1	8.9	9.5	-114.83	-354.8	-334.5	514.3	497.9	16.44	31.286				
2,600.0	2,549.1	2,528.7	2,462.0	9.4	10.1	-114.49	-372.6	-357.2	541.0	523.7	17.31	31.252				
2,700.0	2,646.1	2,625.0	2,553.9	9.8	10.6	-114.19	-390.4	-379.9	567.7	549.5	18.18	31.221				
2,800.0	2,743.0	2,721.4	2,645.8	10.3	11.2	-113.91	-408.1	-402.6	594.4	575.4	19.06	31.194				
2,900.0	2,840.0	2,817.7	2,737.7	10.8	11.7	-113.65	-425.9	-425.3	621.2	601.2	19.93	31.170				
3,000.0	2,936.9	2,914.0	2,829.7	11.2	12.2	-113.42	-443.7	-448.0	647.9	627.1	20.80	31.148				
3,100.0	3,033.9	3,010.3	2,921.6	11.7	12.8	-113.20	-461.4	-470.7	674.7	653.0	21.67	31.128				
3,200.0	3,130.8	3,106.7	3,013.5	12.2	13.3	-113.00	-479.2	-493.4	701.4	678.9	22.55	31.109				
3,300.0	3,227.8	3,203.0	3,105.4	12.7	13.9	-112.81	-496.9	-516.0	728.2	704.8	23.42	31.093				
3,400.0	3,324.7	3,299.3	3,197.3	13.1	14.4	-112.64	-514.7	-538.7	755.0	730.7	24.29	31.077				
3,500.0	3,421.7	3,395.6	3,289.2	13.6	14.9	-112.48	-532.5	-561.4	781.8	756.6	25.17	31.063				
3,600.0	3,518.6	3,491.9	3,381.1	14.1	15.5	-112.33	-550.2	-584.1	808.5	782.5	26.04	31.050				
3,700.0	3,615.6	3,588.3	3,473.0	14.5	16.0	-112.19	-568.0	-606.8	835.3	808.4	26.91	31.038				
3,800.0	3,712.5	3,684.6	3,565.0	15.0	16.6	-112.06	-585.8	-629.5	862.1	834.3	27.79	31.027				
3,900.0	3,809.5	3,780.9	3,656.9	15.5	17.1	-111.94	-603.5	-652.2	888.9	860.3	28.66	31.017				
4,000.0	3,906.4	3,877.2	3,748.8	15.9	17.6	-111.82	-621.3	-674.9	915.7	886.2	29.53	31.007				
4,100.0	4,003.4	3,973.6	3,840.7	16.4	18.2	-111.71	-639.1	-697.6	942.5	912.1	30.41	30.998				
4,200.0	4,100.3	4,069.9	3,932.6	16.9	18.7	-111.61	-656.8	-720.3	969.4	938.1	31.28	30.990				
4,300.0	4,197.3	4,166.2	4,024.5	17.4	19.3	-111.51	-674.6	-743.0	996.2	964.0	32.15	30.982				
4,400.0	4,294.2	4,262.5	4,116.4	17.8	19.8	-111.42	-692.4	-765.6	1,023.0	990.0	33.03	30.974				
4,500.0	4,391.2	4,358.9	4,208.4	18.3	20.4	-111.33	-710.1	-788.3	1,049.8	1,015.9	33.90	30.967				
4,600.0	4,488.2	4,455.2	4,300.3	18.8	20.9	-111.25	-727.9	-811.0	1,076.6	1,041.8	34.77	30.961				
4,700.0	4,585.1	4,551.5	4,392.2	19.2	21.4	-111.17	-745.6	-833.7	1,103.4	1,067.8	35.65	30.954 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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-12D (Oxy I21 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			
0.0	0.0	0.0	0.0	0.0	0.0	156.05	-54.6	24.3	59.8					
100.0	100.0	100.0	100.0	0.1	0.1	156.05	-54.6	24.3	59.8	59.5	0.30	201.487		
200.0	200.0	200.0	200.0	0.3	0.3	156.05	-54.6	24.3	59.8	59.1	0.65	92.575		
300.0	300.0	300.0	300.0	0.5	0.5	156.05	-54.6	24.3	59.8	58.8	0.99	60.093 CC, ES		
400.0	400.0	399.9	399.9	0.7	0.7	-134.18	-55.2	23.1	60.8	59.4	1.35	45.153		
500.0	499.9	499.7	499.6	0.9	0.9	-133.17	-57.0	19.6	63.8	62.0	1.71	37.313		
600.0	599.7	599.4	599.1	1.1	1.1	-131.66	-60.0	13.8	68.8	66.7	2.10	32.815		
700.0	699.3	698.9	698.2	1.3	1.3	-129.89	-64.1	5.7	75.8	73.3	2.52	30.102		
800.0	798.6	798.2	796.8	1.5	1.5	-128.03	-69.4	-4.6	85.0	82.0	2.99	28.411		
900.0	897.5	897.1	894.7	1.8	1.8	-126.23	-75.8	-17.2	96.2	92.7	3.52	27.329		
1,000.0	896.1	895.6	891.8	2.1	2.1	-124.56	-83.4	-32.0	109.6	105.5	4.12	26.620		
1,100.0	1,094.2	1,093.7	1,088.0	2.5	2.5	-123.06	-92.0	-48.9	125.0	120.2	4.78	26.142		
1,200.0	1,191.7	1,191.3	1,183.2	2.9	2.9	-121.72	-101.8	-67.9	142.5	137.0	5.52	25.812		
1,300.0	1,288.7	1,288.3	1,277.3	3.4	3.3	-120.57	-112.5	-88.9	161.9	155.6	6.32	25.594		
1,400.0	1,385.7	1,385.1	1,370.6	3.8	3.8	-119.08	-124.3	-112.0	182.1	174.9	7.17	25.391		
1,500.0	1,482.6	1,482.9	1,464.6	4.3	4.3	-117.65	-136.6	-136.0	202.7	194.7	8.04	25.211		
1,600.0	1,579.6	1,580.6	1,558.5	4.7	4.8	-116.48	-148.9	-160.0	223.4	214.5	8.92	25.057		
1,700.0	1,676.5	1,678.4	1,652.5	5.2	5.3	-115.51	-161.1	-184.0	244.2	234.4	9.80	24.926		
1,800.0	1,773.5	1,776.1	1,746.4	5.6	5.8	-114.69	-173.4	-208.0	265.0	254.4	10.68	24.813		
1,900.0	1,870.4	1,873.8	1,840.4	6.1	6.3	-113.99	-185.7	-232.1	285.9	274.3	11.57	24.716		
2,000.0	1,967.4	1,971.6	1,934.3	6.6	6.8	-113.39	-197.9	-256.1	306.8	294.4	12.46	24.632		
2,100.0	2,064.3	2,069.3	2,028.3	7.0	7.3	-112.86	-210.2	-280.1	327.8	314.4	13.35	24.558		
2,200.0	2,161.3	2,167.1	2,122.2	7.5	7.8	-112.40	-222.5	-304.1	348.7	334.5	14.24	24.493		
2,300.0	2,258.2	2,264.8	2,216.2	8.0	8.3	-111.99	-234.8	-328.1	369.7	354.6	15.13	24.436		
2,400.0	2,355.2	2,362.6	2,310.1	8.4	8.8	-111.62	-247.0	-352.1	390.7	374.7	16.02	24.385		
2,500.0	2,452.1	2,460.3	2,404.1	8.9	9.3	-111.30	-259.3	-376.1	411.7	394.8	16.92	24.339		
2,600.0	2,549.1	2,558.0	2,498.0	9.4	9.8	-111.00	-271.6	-400.1	432.7	414.9	17.81	24.298		
2,700.0	2,646.1	2,655.8	2,592.0	9.8	10.3	-110.73	-283.8	-424.1	453.8	435.1	18.70	24.260		
2,800.0	2,743.0	2,753.5	2,685.9	10.3	10.8	-110.48	-296.1	-448.1	474.8	455.2	19.60	24.226		
2,900.0	2,840.0	2,851.3	2,779.9	10.8	11.4	-110.26	-308.4	-472.1	495.9	475.4	20.49	24.196		
3,000.0	2,936.9	2,949.0	2,873.8	11.2	11.9	-110.05	-320.7	-496.1	516.9	495.5	21.39	24.167		
3,100.0	3,033.9	3,046.7	2,967.8	11.7	12.4	-109.86	-332.9	-520.1	538.0	515.7	22.29	24.141		
3,200.0	3,130.8	3,144.5	3,061.7	12.2	12.9	-109.69	-345.2	-544.1	559.1	535.9	23.18	24.118		
3,300.0	3,227.8	3,242.2	3,155.7	12.7	13.4	-109.52	-357.5	-568.1	580.1	556.1	24.08	24.095		
3,400.0	3,324.7	3,340.0	3,249.6	13.1	13.9	-109.37	-369.7	-592.1	601.2	576.2	24.97	24.075		
3,500.0	3,421.7	3,437.7	3,343.6	13.6	14.4	-109.23	-382.0	-616.2	622.3	596.4	25.87	24.056		
3,600.0	3,518.6	3,535.5	3,437.5	14.1	14.9	-109.10	-394.3	-640.2	643.4	616.6	26.76	24.038		
3,700.0	3,615.6	3,633.2	3,531.5	14.5	15.4	-108.97	-406.6	-664.2	664.5	636.8	27.66	24.022		
3,800.0	3,712.5	3,730.9	3,625.4	15.0	16.0	-108.86	-418.8	-688.2	685.6	657.0	28.56	24.006		
3,900.0	3,809.5	3,828.7	3,719.4	15.5	16.5	-108.75	-431.1	-712.2	706.6	677.2	29.45	23.992		
4,000.0	3,906.4	3,926.4	3,813.3	15.9	17.0	-108.64	-443.4	-736.2	727.7	697.4	30.35	23.978		
4,100.0	4,003.4	4,024.2	3,907.2	16.4	17.5	-108.55	-455.6	-760.2	748.8	717.6	31.25	23.965		
4,200.0	4,100.3	4,121.9	4,001.2	16.9	18.0	-108.46	-467.9	-784.2	769.9	737.8	32.14	23.953		
4,300.0	4,197.3	4,219.6	4,095.1	17.4	18.5	-108.37	-480.2	-808.2	791.0	758.0	33.04	23.942		
4,400.0	4,294.2	4,317.4	4,189.1	17.8	19.0	-108.29	-492.5	-832.2	812.1	778.2	33.94	23.931		
4,500.0	4,391.2	4,415.1	4,283.0	18.3	19.5	-108.21	-504.7	-856.2	833.3	798.4	34.83	23.921		
4,600.0	4,488.2	4,512.9	4,377.0	18.8	20.1	-108.13	-517.0	-880.2	854.4	818.6	35.73	23.911		
4,700.0	4,585.1	4,610.6	4,470.9	19.2	20.6	-108.06	-529.3	-904.2	875.5	838.8	36.63	23.902		
4,800.0	4,682.1	4,708.4	4,564.9	19.7	21.1	-107.99	-541.6	-928.2	896.6	859.0	37.52	23.893		
4,900.0	4,779.0	4,806.1	4,658.8	20.2	21.6	-107.93	-553.8	-952.2	917.7	879.3	38.42	23.885		
5,000.0	4,876.0	4,903.8	4,752.8	20.7	22.1	-107.87	-566.1	-976.2	938.8	899.5	39.32	23.877		
5,100.0	4,972.9	5,001.6	4,846.7	21.1	22.6	-107.81	-578.4	-1,000.3	959.9	919.7	40.21	23.869		

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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-12D (Oxy I21 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		
5,200.0	5,069.9	5,099.3	4,940.7	21.6	23.1	-107.75	-590.6	-1,024.3	981.0	939.9	41.11	23.862		
5,300.0	5,166.8	5,197.1	5,034.6	22.1	23.6	-107.70	-602.9	-1,048.3	1,002.1	960.1	42.01	23.855		
5,400.0	5,263.8	5,294.8	5,128.6	22.5	24.2	-107.65	-615.2	-1,072.3	1,023.2	980.3	42.91	23.849		
5,500.0	5,360.7	5,392.5	5,222.5	23.0	24.7	-107.60	-627.5	-1,096.3	1,044.4	1,000.6	43.80	23.842		
5,600.0	5,457.7	5,490.3	5,316.5	23.5	25.2	-107.55	-639.7	-1,120.3	1,065.5	1,020.8	44.70	23.836		
5,700.0	5,554.6	5,588.0	5,410.4	24.0	25.7	-107.51	-652.0	-1,144.3	1,086.6	1,041.0	45.60	23.830		
5,800.0	5,651.6	5,685.8	5,504.4	24.4	26.2	-107.46	-664.3	-1,168.3	1,107.7	1,061.2	46.49	23.825 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-13D (Oxy I21 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	158.83	-42.3	16.4	45.3					
100.0	100.0	100.0	100.0	0.1	0.1	158.83	-42.3	16.4	45.3	45.0	0.30	152.712		
200.0	200.0	200.0	200.0	0.3	0.3	158.83	-42.3	16.4	45.3	44.7	0.65	70.165		
300.0	300.0	300.0	300.0	0.5	0.5	158.83	-42.3	16.4	45.3	44.3	0.99	45.546 CC, ES		
400.0	400.0	400.1	400.1	0.7	0.7	-131.35	-42.6	15.1	46.1	44.7	1.35	34.216		
500.0	499.9	500.2	500.1	0.9	0.9	-130.18	-43.7	11.3	48.4	46.6	1.71	28.272		
600.0	599.7	600.1	599.8	1.1	1.1	-128.45	-45.5	5.0	52.2	50.1	2.10	24.858		
700.0	699.3	700.0	699.3	1.3	1.3	-126.41	-48.0	-3.7	57.6	55.1	2.53	22.791		
800.0	798.6	799.7	798.3	1.5	1.5	-124.29	-51.3	-15.0	64.7	61.7	3.01	21.491		
900.0	897.5	899.2	896.7	1.8	1.8	-122.24	-55.2	-28.7	73.4	69.9	3.56	20.646		
1,000.0	996.1	998.4	994.5	2.1	2.1	-120.36	-59.9	-44.8	83.8	79.6	4.17	20.078		
1,100.0	1,094.2	1,097.4	1,091.6	2.5	2.5	-118.68	-65.2	-63.3	95.8	90.9	4.87	19.683		
1,200.0	1,191.7	1,196.1	1,187.9	2.9	2.9	-117.20	-71.2	-84.2	109.4	103.8	5.64	19.400		
1,300.0	1,288.7	1,294.7	1,283.6	3.4	3.3	-116.04	-77.8	-107.0	124.4	118.0	6.46	19.251		
1,400.0	1,385.7	1,393.5	1,379.5	3.8	3.8	-115.21	-84.5	-130.1	139.6	132.3	7.31	19.112		
1,500.0	1,482.6	1,492.4	1,475.3	4.3	4.2	-114.53	-91.1	-153.2	154.9	146.7	8.16	18.980		
1,600.0	1,579.6	1,591.2	1,571.2	4.7	4.7	-113.98	-97.8	-176.4	170.1	161.1	9.02	18.857		
1,700.0	1,676.5	1,690.0	1,667.0	5.2	5.1	-113.52	-104.5	-199.5	185.4	175.5	9.89	18.747		
1,800.0	1,773.5	1,788.8	1,762.8	5.6	5.6	-113.12	-111.1	-222.6	200.6	189.9	10.76	18.647		
1,900.0	1,870.4	1,887.6	1,858.7	6.1	6.0	-112.79	-117.8	-245.7	215.9	204.3	11.63	18.558		
2,000.0	1,967.4	1,986.5	1,954.5	6.6	6.5	-112.49	-124.5	-268.8	231.2	218.7	12.51	18.478		
2,100.0	2,064.3	2,085.3	2,050.4	7.0	6.9	-112.24	-131.1	-292.0	246.5	233.1	13.39	18.406		
2,200.0	2,161.3	2,184.1	2,146.2	7.5	7.4	-112.01	-137.8	-315.1	261.8	247.5	14.27	18.341		
2,300.0	2,258.2	2,282.9	2,242.1	8.0	7.9	-111.81	-144.5	-338.2	277.1	261.9	15.16	18.282		
2,400.0	2,355.2	2,381.7	2,337.9	8.4	8.3	-111.63	-151.1	-361.3	292.4	276.3	16.04	18.228		
2,500.0	2,452.1	2,480.5	2,433.8	8.9	8.8	-111.47	-157.8	-384.4	307.7	290.7	16.92	18.179		
2,600.0	2,549.1	2,579.4	2,529.6	9.4	9.2	-111.32	-164.4	-407.5	323.0	305.2	17.81	18.135		
2,700.0	2,646.1	2,678.2	2,625.5	9.8	9.7	-111.19	-171.1	-430.7	338.3	319.6	18.70	18.093		
2,800.0	2,743.0	2,777.0	2,721.3	10.3	10.2	-111.07	-177.8	-453.8	353.6	334.0	19.58	18.056		
2,900.0	2,840.0	2,875.8	2,817.1	10.8	10.6	-110.96	-184.4	-476.9	368.9	348.4	20.47	18.021		
3,000.0	2,936.9	2,974.6	2,913.0	11.2	11.1	-110.85	-191.1	-500.0	384.2	362.8	21.36	17.988		
3,100.0	3,033.9	3,073.5	3,008.8	11.7	11.5	-110.76	-197.8	-523.1	399.5	377.3	22.25	17.958		
3,200.0	3,130.8	3,172.3	3,104.7	12.2	12.0	-110.67	-204.4	-546.2	414.8	391.7	23.14	17.930		
3,300.0	3,227.8	3,271.1	3,200.5	12.7	12.5	-110.59	-211.1	-569.4	430.1	406.1	24.02	17.904		
3,400.0	3,324.7	3,369.9	3,296.4	13.1	12.9	-110.51	-217.8	-592.5	445.4	420.5	24.91	17.879		
3,500.0	3,421.7	3,468.7	3,392.2	13.6	13.4	-110.44	-224.4	-615.6	460.8	435.0	25.80	17.856		
3,600.0	3,518.6	3,567.6	3,488.1	14.1	13.9	-110.37	-231.1	-638.7	476.1	449.4	26.69	17.835		
3,700.0	3,615.6	3,666.4	3,583.9	14.5	14.3	-110.31	-237.8	-661.8	491.4	463.8	27.58	17.815		
3,800.0	3,712.5	3,765.2	3,679.8	15.0	14.8	-110.25	-244.4	-684.9	506.7	478.2	28.47	17.796		
3,900.0	3,809.5	3,864.0	3,775.6	15.5	15.3	-110.20	-251.1	-708.1	522.0	492.7	29.36	17.778		
4,000.0	3,906.4	3,962.8	3,871.4	15.9	15.7	-110.15	-257.7	-731.2	537.3	507.1	30.25	17.760		
4,100.0	4,003.4	4,061.7	3,967.3	16.4	16.2	-110.10	-264.4	-754.3	552.7	521.5	31.15	17.744		
4,200.0	4,100.3	4,160.5	4,063.1	16.9	16.6	-110.05	-271.1	-777.4	568.0	535.9	32.04	17.729		
4,300.0	4,197.3	4,259.3	4,159.0	17.4	17.1	-110.01	-277.7	-800.5	583.3	550.4	32.93	17.715		
4,400.0	4,294.2	4,358.1	4,254.8	17.8	17.6	-109.97	-284.4	-823.6	598.6	564.8	33.82	17.701		
4,500.0	4,391.2	4,456.9	4,350.7	18.3	18.0	-109.93	-291.1	-846.8	613.9	579.2	34.71	17.688		
4,600.0	4,488.2	4,555.7	4,446.5	18.8	18.5	-109.89	-297.7	-869.9	629.2	593.6	35.60	17.675		
4,700.0	4,585.1	4,654.6	4,542.4	19.2	19.0	-109.85	-304.4	-893.0	644.6	608.1	36.49	17.663		
4,800.0	4,682.1	4,753.4	4,638.2	19.7	19.4	-109.82	-311.1	-916.1	659.9	622.5	37.38	17.652		
4,900.0	4,779.0	4,852.2	4,734.1	20.2	19.9	-109.78	-317.7	-939.2	675.2	636.9	38.27	17.641		
5,000.0	4,876.0	4,951.0	4,829.9	20.7	20.3	-109.75	-324.4	-962.4	690.5	651.4	39.17	17.631		
5,100.0	4,972.9	5,049.8	4,925.7	21.1	20.8	-109.72	-331.0	-985.5	705.8	665.8	40.06	17.621		

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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-13D (Oxy I21 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		
5,200.0	5,069.9	5,148.7	5,021.6	21.6	21.3	-109.69	-337.7	-1,008.6	721.2	680.2	40.95	17.611		
5,300.0	5,166.8	5,247.5	5,117.4	22.1	21.7	-109.67	-344.4	-1,031.7	736.5	694.6	41.84	17.602		
5,400.0	5,263.8	5,346.3	5,213.3	22.5	22.2	-109.64	-351.0	-1,054.8	751.8	709.1	42.73	17.593		
5,500.0	5,360.7	5,445.1	5,309.1	23.0	22.7	-109.62	-357.7	-1,077.9	767.1	723.5	43.62	17.585		
5,600.0	5,457.7	5,543.9	5,405.0	23.5	23.1	-109.59	-364.4	-1,101.1	782.4	737.9	44.52	17.576		
5,700.0	5,554.6	5,642.8	5,500.8	24.0	23.6	-109.57	-371.0	-1,124.2	797.8	752.4	45.41	17.569		
5,800.0	5,651.6	5,741.6	5,596.7	24.4	24.1	-109.55	-377.7	-1,147.3	813.1	766.8	46.30	17.561		
5,900.0	5,748.5	5,840.4	5,692.5	24.9	24.5	-109.52	-384.4	-1,170.4	828.4	781.2	47.19	17.554		
6,000.0	5,845.5	5,939.2	5,788.4	25.4	25.0	-109.50	-391.0	-1,193.5	843.7	795.6	48.08	17.547		
6,100.0	5,942.5	6,038.0	5,884.2	25.8	25.5	-109.51	-397.7	-1,216.6	859.0	810.1	48.98	17.539		
6,200.0	6,039.8	6,141.2	5,984.4	26.3	25.9	-109.63	-404.5	-1,240.2	873.6	823.8	49.85	17.526		
6,300.0	6,137.7	6,247.2	6,088.0	26.6	26.3	-109.72	-410.7	-1,261.9	886.7	836.0	50.64	17.511		
6,400.0	6,236.1	6,353.6	6,192.5	27.0	26.7	-109.80	-416.2	-1,280.9	898.0	846.7	51.34	17.493		
6,500.0	6,335.0	6,460.2	6,297.8	27.3	27.0	-109.88	-420.9	-1,297.1	907.7	855.8	51.95	17.473		
6,600.0	6,434.2	6,567.2	6,403.8	27.5	27.3	-109.94	-424.7	-1,310.5	915.8	863.3	52.48	17.450		
6,700.0	6,533.7	6,674.3	6,510.4	27.7	27.5	-110.00	-427.8	-1,321.0	922.1	869.2	52.92	17.424		
6,800.0	6,633.4	6,781.6	6,617.4	27.9	27.7	-110.05	-430.0	-1,328.7	926.8	873.5	53.28	17.395		
6,900.0	6,733.3	6,889.0	6,724.7	28.0	27.9	-110.09	-431.4	-1,333.5	929.7	876.2	53.55	17.363		
7,000.0	6,833.3	6,996.4	6,832.1	28.1	27.9	-110.12	-431.9	-1,335.4	931.0	877.2	53.73	17.326		
7,100.0	6,933.3	7,097.6	6,933.3	28.2	28.0	-179.53	-431.9	-1,335.5	931.0	877.1	53.89	17.275		
7,200.0	7,033.3	7,197.6	7,033.3	28.3	28.1	-179.53	-431.9	-1,335.5	931.0	877.0	54.05	17.224		
7,300.0	7,133.3	7,297.6	7,133.3	28.3	28.2	-179.53	-431.9	-1,335.5	931.0	876.8	54.22	17.172		
7,400.0	7,233.3	7,397.6	7,233.3	28.4	28.3	-179.53	-431.9	-1,335.5	931.0	876.6	54.38	17.120		
7,500.0	7,333.3	7,497.6	7,333.3	28.5	28.3	-179.53	-431.9	-1,335.5	931.0	876.5	54.55	17.068		
7,600.0	7,433.3	7,597.6	7,433.3	28.6	28.4	-179.53	-431.9	-1,335.5	931.0	876.3	54.72	17.016		
7,700.0	7,533.3	7,697.6	7,533.3	28.7	28.5	-179.53	-431.9	-1,335.5	931.0	876.1	54.89	16.963		
7,800.0	7,633.3	7,797.6	7,633.3	28.7	28.6	-179.53	-431.9	-1,335.5	931.0	876.0	55.06	16.910		
7,900.0	7,733.3	7,897.6	7,733.3	28.8	28.7	-179.53	-431.9	-1,335.5	931.0	875.8	55.23	16.857		
8,000.0	7,833.3	7,997.6	7,833.3	28.9	28.8	-179.53	-431.9	-1,335.5	931.0	875.6	55.41	16.804		
8,100.0	7,933.3	8,097.6	7,933.3	29.0	28.8	-179.53	-431.9	-1,335.5	931.0	875.5	55.58	16.751		
8,200.0	8,033.3	8,197.6	8,033.3	29.1	28.9	-179.53	-431.9	-1,335.5	931.0	875.3	55.76	16.697		
8,300.0	8,133.3	8,297.6	8,133.3	29.2	29.0	-179.53	-431.9	-1,335.5	931.0	875.1	55.94	16.644		
8,400.0	8,233.3	8,397.6	8,233.3	29.3	29.1	-179.53	-431.9	-1,335.5	931.0	874.9	56.12	16.590		
8,500.0	8,333.3	8,497.6	8,333.3	29.3	29.2	-179.53	-431.9	-1,335.5	931.0	874.7	56.30	16.536		
8,600.0	8,433.3	8,597.6	8,433.3	29.4	29.3	-179.53	-431.9	-1,335.5	931.0	874.5	56.49	16.482		
8,700.0	8,533.3	8,697.6	8,533.3	29.5	29.4	-179.53	-431.9	-1,335.5	931.0	874.4	56.67	16.428		
8,800.0	8,633.3	8,797.6	8,633.3	29.6	29.5	-179.53	-431.9	-1,335.5	931.0	874.2	56.86	16.374		
8,847.7	8,680.9	8,845.3	8,680.9	29.7	29.5	-179.53	-431.9	-1,335.5	931.0	874.1	56.95	16.348		
8,880.7	8,714.0	8,863.4	8,699.0	29.7	29.5	-179.53	-431.9	-1,335.5	931.2	874.2	57.00	16.336 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-14D (Oxy I21 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			
0.0	0.0	0.0	0.0	0.0	0.0	165.35	-30.2	7.9	31.2					
100.0	100.0	100.0	100.0	0.1	0.1	165.35	-30.2	7.9	31.2	31.0	0.30	105.314		
200.0	200.0	200.0	200.0	0.3	0.3	165.35	-30.2	7.9	31.2	30.6	0.65	48.388		
300.0	300.0	300.0	300.0	0.5	0.5	165.35	-30.2	7.9	31.2	30.3	0.99	31.409 CC, ES		
400.0	400.0	400.1	400.1	0.7	0.7	-124.84	-30.3	6.6	31.8	30.4	1.35	23.596		
500.0	499.9	500.3	500.2	0.9	0.9	-123.69	-30.7	2.7	33.4	31.7	1.71	19.495		
600.0	599.7	600.3	600.0	1.1	1.1	-122.01	-31.2	-3.9	36.0	33.9	2.10	17.132		
700.0	699.3	700.4	699.6	1.3	1.3	-120.04	-31.9	-13.0	39.8	37.3	2.54	15.690		
800.0	798.6	800.3	798.9	1.5	1.5	-117.99	-32.9	-24.7	44.7	41.7	3.03	14.772		
900.0	897.5	900.2	897.7	1.8	1.8	-116.01	-34.0	-39.0	50.8	47.2	3.59	14.163		
1,000.0	996.1	999.9	996.0	2.1	2.1	-114.21	-35.4	-55.8	58.0	53.8	4.22	13.743		
1,100.0	1,094.2	1,099.5	1,093.7	2.5	2.5	-112.60	-36.9	-75.2	66.4	61.4	4.94	13.442		
1,200.0	1,191.7	1,198.9	1,190.7	2.9	2.9	-111.19	-38.7	-97.0	75.8	70.1	5.74	13.216		
1,300.0	1,288.7	1,298.4	1,287.3	3.4	3.3	-110.60	-40.6	-120.3	86.2	79.7	6.57	13.119		
1,400.0	1,385.7	1,397.8	1,384.0	3.8	3.8	-110.33	-42.4	-143.5	96.7	89.3	7.42	13.031		
1,500.0	1,482.6	1,497.3	1,480.7	4.3	4.2	-110.12	-44.3	-166.7	107.2	98.9	8.28	12.944		
1,600.0	1,579.6	1,596.7	1,577.4	4.7	4.6	-109.94	-46.2	-189.9	117.7	108.6	9.15	12.864		
1,700.0	1,676.5	1,696.2	1,674.1	5.2	5.1	-109.80	-48.0	-213.1	128.2	118.2	10.02	12.790		
1,800.0	1,773.5	1,795.6	1,770.7	5.6	5.5	-109.67	-49.9	-236.4	138.7	127.8	10.90	12.723		
1,900.0	1,870.4	1,895.1	1,867.4	6.1	6.0	-109.57	-51.8	-259.6	149.2	137.4	11.78	12.663		
2,000.0	1,967.4	1,994.5	1,964.1	6.6	6.4	-109.47	-53.6	-282.8	159.7	147.0	12.66	12.608		
2,100.0	2,064.3	2,094.0	2,060.8	7.0	6.9	-109.39	-55.5	-306.0	170.2	156.6	13.55	12.559		
2,200.0	2,161.3	2,193.4	2,157.5	7.5	7.3	-109.32	-57.4	-329.2	180.7	166.2	14.44	12.514		
2,300.0	2,258.2	2,292.9	2,254.1	8.0	7.8	-109.25	-59.3	-352.4	191.2	175.8	15.33	12.473		
2,400.0	2,355.2	2,392.3	2,350.8	8.4	8.2	-109.20	-61.1	-375.7	201.6	185.4	16.21	12.436		
2,500.0	2,452.1	2,491.7	2,447.5	8.9	8.7	-109.15	-63.0	-398.9	212.1	195.0	17.11	12.402		
2,600.0	2,549.1	2,591.2	2,544.2	9.4	9.1	-109.10	-64.9	-422.1	222.6	204.6	18.00	12.371		
2,700.0	2,646.1	2,690.6	2,640.9	9.8	9.5	-109.06	-66.7	-445.3	233.1	214.2	18.89	12.342		
2,800.0	2,743.0	2,790.1	2,737.6	10.3	10.0	-109.02	-68.6	-468.5	243.6	223.8	19.78	12.315		
2,900.0	2,840.0	2,889.5	2,834.2	10.8	10.4	-108.98	-70.5	-491.8	254.1	233.4	20.68	12.291		
3,000.0	2,936.9	2,989.0	2,930.9	11.2	10.9	-108.95	-72.3	-515.0	264.6	243.1	21.57	12.268		
3,100.0	3,033.9	3,088.4	3,027.6	11.7	11.3	-108.92	-74.2	-538.2	275.1	252.7	22.46	12.247		
3,200.0	3,130.8	3,187.9	3,124.3	12.2	11.8	-108.89	-76.1	-561.4	285.6	262.3	23.36	12.227		
3,300.0	3,227.8	3,287.3	3,221.0	12.7	12.2	-108.86	-78.0	-584.6	296.1	271.9	24.25	12.208		
3,400.0	3,324.7	3,386.8	3,317.6	13.1	12.7	-108.84	-79.8	-607.8	306.6	281.5	25.15	12.191		
3,500.0	3,421.7	3,486.2	3,414.3	13.6	13.1	-108.82	-81.7	-631.1	317.1	291.1	26.05	12.175		
3,600.0	3,518.6	3,585.7	3,511.0	14.1	13.6	-108.79	-83.6	-654.3	327.6	300.7	26.94	12.159		
3,700.0	3,615.6	3,685.1	3,607.7	14.5	14.0	-108.77	-85.4	-677.5	338.1	310.3	27.84	12.145		
3,800.0	3,712.5	3,784.6	3,704.4	15.0	14.5	-108.76	-87.3	-700.7	348.6	319.9	28.73	12.131		
3,900.0	3,809.5	3,884.0	3,801.0	15.5	14.9	-108.74	-89.2	-723.9	359.1	329.5	29.63	12.119		
4,000.0	3,906.4	3,983.5	3,897.7	15.9	15.4	-108.72	-91.1	-747.2	369.6	339.1	30.53	12.106		
4,100.0	4,003.4	4,082.9	3,994.4	16.4	15.9	-108.71	-92.9	-770.4	380.1	348.7	31.42	12.095		
4,200.0	4,100.3	4,182.4	4,091.1	16.9	16.3	-108.69	-94.8	-793.6	390.6	358.2	32.32	12.084		
4,300.0	4,197.3	4,281.8	4,187.8	17.4	16.8	-108.68	-96.7	-816.8	401.1	367.8	33.22	12.074		
4,400.0	4,294.2	4,381.3	4,284.5	17.8	17.2	-108.66	-98.5	-840.0	411.6	377.4	34.12	12.064		
4,500.0	4,391.2	4,480.7	4,381.1	18.3	17.7	-108.65	-100.4	-863.2	422.1	387.0	35.01	12.054		
4,600.0	4,488.2	4,580.1	4,477.8	18.8	18.1	-108.64	-102.3	-886.5	432.6	396.6	35.91	12.045		
4,700.0	4,585.1	4,679.6	4,574.5	19.2	18.6	-108.63	-104.1	-909.7	443.1	406.2	36.81	12.037		
4,800.0	4,682.1	4,779.0	4,671.2	19.7	19.0	-108.62	-106.0	-932.9	453.5	415.8	37.71	12.029		
4,900.0	4,779.0	4,878.5	4,767.9	20.2	19.5	-108.61	-107.9	-956.1	464.0	425.4	38.60	12.021		
5,000.0	4,876.0	4,977.9	4,864.5	20.7	19.9	-108.60	-109.8	-979.3	474.5	435.0	39.50	12.013		
5,100.0	4,972.9	5,077.4	4,961.2	21.1	20.4	-108.59	-111.6	-1,002.6	485.0	444.6	40.40	12.006		

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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-14D (Oxy I21 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		
5,200.0	5,069.9	5,176.8	5,057.9	21.6	20.8	-108.58	-113.5	-1,025.8	495.5	454.2	41.30	11.999		
5,300.0	5,166.8	5,276.3	5,154.6	22.1	21.3	-108.57	-115.4	-1,049.0	506.0	463.8	42.20	11.993		
5,400.0	5,263.8	5,375.7	5,251.3	22.5	21.7	-108.56	-117.2	-1,072.2	516.5	473.4	43.09	11.986		
5,500.0	5,360.7	5,475.2	5,347.9	23.0	22.2	-108.55	-119.1	-1,095.4	527.0	483.0	43.99	11.980		
5,600.0	5,457.7	5,574.6	5,444.6	23.5	22.6	-108.54	-121.0	-1,118.6	537.5	492.6	44.89	11.974		
5,700.0	5,554.6	5,674.1	5,541.3	24.0	23.1	-108.54	-122.8	-1,141.9	548.0	502.2	45.79	11.969		
5,800.0	5,651.6	5,773.5	5,638.0	24.4	23.5	-108.53	-124.7	-1,165.1	558.5	511.8	46.69	11.963		
5,900.0	5,748.5	5,873.0	5,734.7	24.9	24.0	-108.52	-126.6	-1,188.3	569.0	521.4	47.58	11.958		
6,000.0	5,845.5	5,972.4	5,831.4	25.4	24.4	-108.51	-128.5	-1,211.5	579.5	531.0	48.48	11.953		
6,100.0	5,942.5	6,071.9	5,928.0	25.8	24.9	-108.53	-130.3	-1,234.7	590.0	540.6	49.38	11.948		
6,200.0	6,039.8	6,172.5	6,026.0	26.3	25.3	-108.56	-132.2	-1,257.6	599.9	549.7	50.23	11.944		
6,300.0	6,137.7	6,273.8	6,125.2	26.6	25.7	-108.59	-133.8	-1,278.2	608.7	557.7	50.99	11.938		
6,400.0	6,236.1	6,375.3	6,225.0	27.0	26.0	-108.62	-135.3	-1,296.2	616.4	564.7	51.66	11.931		
6,500.0	6,335.0	6,476.9	6,325.5	27.3	26.3	-108.64	-136.5	-1,311.5	623.0	570.7	52.26	11.921		
6,600.0	6,434.2	6,578.6	6,426.4	27.5	26.6	-108.67	-137.5	-1,324.2	628.4	575.6	52.76	11.910		
6,700.0	6,533.7	6,680.4	6,527.6	27.7	26.8	-108.69	-138.3	-1,334.2	632.7	579.5	53.19	11.896		
6,800.0	6,633.4	6,782.2	6,629.2	27.9	27.0	-108.72	-138.9	-1,341.6	635.9	582.3	53.53	11.880		
6,900.0	6,733.3	6,884.1	6,731.0	28.0	27.1	-108.74	-139.3	-1,346.2	637.9	584.1	53.78	11.860		
7,000.0	6,833.3	6,986.0	6,832.9	28.1	27.2	-108.77	-139.5	-1,348.1	638.8	584.8	53.96	11.838		
7,100.0	6,933.3	7,086.4	6,933.3	28.2	27.3	-178.17	-139.5	-1,348.2	638.8	584.7	54.12	11.805		
7,200.0	7,033.3	7,186.4	7,033.3	28.3	27.4	-178.17	-139.5	-1,348.2	638.8	584.6	54.28	11.770		
7,300.0	7,133.3	7,286.4	7,133.3	28.3	27.4	-178.17	-139.5	-1,348.2	638.8	584.4	54.44	11.735		
7,400.0	7,233.3	7,386.4	7,233.3	28.4	27.5	-178.17	-139.5	-1,348.2	638.8	584.2	54.60	11.700		
7,500.0	7,333.3	7,486.4	7,333.3	28.5	27.6	-178.17	-139.5	-1,348.2	638.8	584.1	54.77	11.664		
7,600.0	7,433.3	7,586.4	7,433.3	28.6	27.7	-178.17	-139.5	-1,348.2	638.8	583.9	54.94	11.629		
7,700.0	7,533.3	7,686.4	7,533.3	28.7	27.8	-178.17	-139.5	-1,348.2	638.8	583.7	55.11	11.593		
7,800.0	7,633.3	7,786.4	7,633.3	28.7	27.8	-178.17	-139.5	-1,348.2	638.8	583.6	55.28	11.557		
7,900.0	7,733.3	7,886.4	7,733.3	28.8	27.9	-178.17	-139.5	-1,348.2	638.8	583.4	55.45	11.521		
8,000.0	7,833.3	7,986.4	7,833.3	28.9	28.0	-178.17	-139.5	-1,348.2	638.8	583.2	55.62	11.485		
8,100.0	7,933.3	8,086.4	7,933.3	29.0	28.1	-178.17	-139.5	-1,348.2	638.8	583.0	55.80	11.449		
8,200.0	8,033.3	8,186.4	8,033.3	29.1	28.2	-178.17	-139.5	-1,348.2	638.8	582.9	55.97	11.413		
8,300.0	8,133.3	8,286.4	8,133.3	29.2	28.3	-178.17	-139.5	-1,348.2	638.8	582.7	56.15	11.377		
8,400.0	8,233.3	8,386.4	8,233.3	29.3	28.4	-178.17	-139.5	-1,348.2	638.8	582.5	56.33	11.340		
8,500.0	8,333.3	8,486.4	8,333.3	29.3	28.5	-178.17	-139.5	-1,348.2	638.8	582.3	56.52	11.304		
8,600.0	8,433.3	8,586.4	8,433.3	29.4	28.6	-178.17	-139.5	-1,348.2	638.8	582.1	56.70	11.267		
8,700.0	8,533.3	8,686.4	8,533.3	29.5	28.6	-178.17	-139.5	-1,348.2	638.8	582.0	56.88	11.230		
8,800.0	8,633.3	8,786.4	8,633.3	29.6	28.7	-178.17	-139.5	-1,348.2	638.8	581.8	57.07	11.194		
8,850.0	8,683.3	8,836.4	8,683.3	29.7	28.8	-178.17	-139.5	-1,348.2	638.8	581.7	57.17	11.175		
8,880.7	8,714.0	8,857.1	8,704.0	29.7	28.8	-178.17	-139.5	-1,348.2	638.9	581.7	57.21	11.167 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-15D (Oxy I21 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	180.00	-17.1	0.0	17.1					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-17.1	0.0	17.1	16.8	0.30	57.698		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-17.1	0.0	17.1	16.5	0.65	26.510		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-17.1	0.0	17.1	16.1	0.99	17.208 CC		
400.0	400.0	400.1	400.1	0.7	0.7	-110.36	-16.9	-1.3	17.4	16.0	1.35	12.909 ES		
500.0	499.9	500.1	500.0	0.9	0.9	-109.70	-16.3	-5.2	18.2	16.5	1.71	10.615		
600.0	599.7	600.2	599.9	1.1	1.1	-108.71	-15.4	-11.7	19.5	17.4	2.11	9.257		
700.0	699.3	700.2	699.5	1.3	1.3	-107.54	-14.0	-20.7	21.4	18.9	2.55	8.396		
800.0	798.6	800.2	798.8	1.5	1.5	-106.30	-12.3	-32.4	23.9	20.8	3.05	7.819		
900.0	897.5	900.2	897.8	1.8	1.8	-105.09	-10.2	-46.5	26.9	23.2	3.62	7.414		
1,000.0	996.1	1,000.2	996.3	2.1	2.1	-103.96	-7.7	-63.3	30.4	26.1	4.27	7.119		
1,100.0	1,094.2	1,100.1	1,094.3	2.5	2.5	-102.94	-4.8	-82.6	34.5	29.5	5.00	6.896		
1,200.0	1,191.7	1,200.0	1,191.7	2.9	2.9	-102.04	-1.6	-104.4	39.1	33.3	5.82	6.721		
1,300.0	1,288.7	1,299.9	1,288.7	3.4	3.4	-101.95	1.9	-127.9	44.2	37.5	6.68	6.621		
1,400.0	1,385.7	1,399.8	1,385.7	3.8	3.8	-102.17	5.4	-151.3	49.4	41.8	7.55	6.539		
1,500.0	1,482.6	1,499.6	1,482.7	4.3	4.2	-102.35	8.9	-174.8	54.5	46.1	8.43	6.466		
1,600.0	1,579.6	1,599.5	1,579.8	4.7	4.7	-102.49	12.4	-198.3	59.7	50.3	9.32	6.402		
1,700.0	1,676.5	1,699.4	1,676.8	5.2	5.1	-102.62	15.9	-221.8	64.8	54.6	10.21	6.345		
1,800.0	1,773.5	1,799.2	1,773.8	5.6	5.6	-102.72	19.4	-245.3	70.0	58.8	11.11	6.296		
1,900.0	1,870.4	1,899.1	1,870.8	6.1	6.0	-102.81	22.9	-268.8	75.1	63.1	12.01	6.252		
2,000.0	1,967.4	1,999.0	1,967.8	6.6	6.5	-102.89	26.4	-292.3	80.3	67.3	12.92	6.213		
2,100.0	2,064.3	2,098.8	2,064.8	7.0	6.9	-102.96	29.9	-315.8	85.4	71.6	13.82	6.179		
2,200.0	2,161.3	2,198.7	2,161.8	7.5	7.4	-103.02	33.4	-339.3	90.6	75.8	14.73	6.148		
2,300.0	2,258.2	2,298.6	2,258.8	8.0	7.8	-103.08	36.9	-362.8	95.7	80.1	15.64	6.120		
2,400.0	2,355.2	2,398.4	2,355.8	8.4	8.3	-103.13	40.4	-386.3	100.9	84.3	16.55	6.094		
2,500.0	2,452.1	2,498.3	2,452.8	8.9	8.8	-103.17	43.9	-409.8	106.0	88.5	17.46	6.071		
2,600.0	2,549.1	2,598.2	2,549.8	9.4	9.2	-103.21	47.4	-433.3	111.2	92.8	18.37	6.050		
2,700.0	2,646.1	2,698.0	2,646.8	9.8	9.7	-103.25	50.9	-456.8	116.3	97.0	19.29	6.031		
2,800.0	2,743.0	2,797.9	2,743.8	10.3	10.1	-103.28	54.4	-480.3	121.5	101.3	20.20	6.013		
2,900.0	2,840.0	2,897.8	2,840.8	10.8	10.6	-103.32	57.9	-503.8	126.6	105.5	21.11	5.997		
3,000.0	2,936.9	2,997.7	2,937.8	11.2	11.0	-103.34	61.4	-527.3	131.8	109.7	22.03	5.982		
3,100.0	3,033.9	3,097.5	3,034.8	11.7	11.5	-103.37	64.9	-550.7	136.9	114.0	22.94	5.968		
3,200.0	3,130.8	3,197.4	3,131.8	12.2	12.0	-103.40	68.4	-574.2	142.1	118.2	23.86	5.955		
3,300.0	3,227.8	3,297.3	3,228.8	12.7	12.4	-103.42	71.9	-597.7	147.2	122.4	24.77	5.943		
3,400.0	3,324.7	3,397.1	3,325.8	13.1	12.9	-103.44	75.4	-621.2	152.4	126.7	25.69	5.932		
3,500.0	3,421.7	3,497.0	3,422.8	13.6	13.3	-103.46	78.9	-644.7	157.5	130.9	26.60	5.921		
3,600.0	3,518.6	3,596.9	3,519.8	14.1	13.8	-103.48	82.4	-668.2	162.7	135.2	27.52	5.911		
3,700.0	3,615.6	3,696.7	3,616.8	14.5	14.2	-103.50	85.9	-691.7	167.8	139.4	28.44	5.902		
3,800.0	3,712.5	3,796.6	3,713.8	15.0	14.7	-103.51	89.4	-715.2	173.0	143.6	29.35	5.893		
3,900.0	3,809.5	3,896.5	3,810.8	15.5	15.2	-103.53	92.9	-738.7	178.1	147.9	30.27	5.885		
4,000.0	3,906.4	3,996.3	3,907.8	15.9	15.6	-103.54	96.4	-762.2	183.3	152.1	31.19	5.877		
4,100.0	4,003.4	4,096.2	4,004.8	16.4	16.1	-103.56	99.9	-785.7	188.4	156.3	32.10	5.870		
4,200.0	4,100.3	4,196.1	4,101.8	16.9	16.5	-103.57	103.4	-809.2	193.6	160.6	33.02	5.863		
4,300.0	4,197.3	4,295.9	4,198.8	17.4	17.0	-103.58	106.9	-832.7	198.7	164.8	33.94	5.856		
4,400.0	4,294.2	4,395.8	4,295.8	17.8	17.5	-103.59	110.4	-856.2	203.9	169.0	34.85	5.850		
4,500.0	4,391.2	4,495.7	4,392.8	18.3	17.9	-103.60	113.9	-879.7	209.0	173.3	35.77	5.844		
4,600.0	4,488.2	4,595.5	4,489.8	18.8	18.4	-103.61	117.4	-903.2	214.2	177.5	36.69	5.838		
4,700.0	4,585.1	4,695.4	4,586.8	19.2	18.8	-103.62	120.9	-926.6	219.3	181.7	37.61	5.832		
4,800.0	4,682.1	4,795.3	4,683.8	19.7	19.3	-103.63	124.3	-950.1	224.5	186.0	38.52	5.827		
4,900.0	4,779.0	4,895.1	4,780.8	20.2	19.8	-103.64	127.8	-973.6	229.6	190.2	39.44	5.822		
5,000.0	4,876.0	4,995.0	4,877.8	20.7	20.2	-103.65	131.3	-997.1	234.8	194.4	40.36	5.818		
5,100.0	4,972.9	5,094.9	4,974.8	21.1	20.7	-103.66	134.8	-1,020.6	239.9	198.7	41.28	5.813		

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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-15D (Oxy I21 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		
5,200.0	5,069.9	5,194.7	5,071.8	21.6	21.1	-103.67	138.3	-1,044.1	245.1	202.9	42.20	5.809		
5,300.0	5,166.8	5,294.6	5,168.8	22.1	21.6	-103.68	141.8	-1,067.6	250.3	207.1	43.11	5.804		
5,400.0	5,263.8	5,394.5	5,265.8	22.5	22.1	-103.68	145.3	-1,091.1	255.4	211.4	44.03	5.800		
5,500.0	5,360.7	5,494.3	5,362.8	23.0	22.5	-103.69	148.8	-1,114.6	260.6	215.6	44.95	5.797		
5,600.0	5,457.7	5,594.2	5,459.8	23.5	23.0	-103.70	152.3	-1,138.1	265.7	219.8	45.87	5.793		
5,700.0	5,554.6	5,694.1	5,556.8	24.0	23.4	-103.71	155.8	-1,161.6	270.9	224.1	46.79	5.789		
5,800.0	5,651.6	5,793.9	5,653.8	24.4	23.9	-103.71	159.3	-1,185.1	276.0	228.3	47.70	5.786		
5,900.0	5,748.5	5,893.8	5,750.8	24.9	24.4	-103.72	162.8	-1,208.6	281.2	232.5	48.62	5.783		
6,000.0	5,845.5	5,993.7	5,847.8	25.4	24.8	-103.72	166.3	-1,232.1	286.3	236.8	49.54	5.779		
6,100.0	5,942.5	6,093.5	5,944.8	25.8	25.3	-103.73	169.8	-1,255.6	291.5	241.0	50.46	5.776		
6,200.0	6,039.8	6,193.2	6,041.9	26.3	25.7	-103.72	173.1	-1,277.9	296.2	245.0	51.30	5.775		
6,300.0	6,137.7	6,292.8	6,139.5	26.6	26.1	-103.70	176.1	-1,297.7	300.5	248.5	52.05	5.773		
6,400.0	6,236.1	6,392.5	6,237.6	27.0	26.4	-103.69	178.7	-1,315.0	304.2	251.5	52.72	5.771		
6,500.0	6,335.0	6,492.2	6,336.2	27.3	26.7	-103.69	180.9	-1,329.8	307.4	254.1	53.30	5.767		
6,600.0	6,434.2	6,592.0	6,435.2	27.5	26.9	-103.69	182.7	-1,342.0	310.0	256.2	53.80	5.763		
6,700.0	6,533.7	6,691.7	6,534.4	27.7	27.1	-103.70	184.1	-1,351.7	312.1	257.9	54.21	5.757		
6,800.0	6,633.4	6,791.5	6,633.9	27.9	27.3	-103.71	185.2	-1,358.8	313.7	259.1	54.55	5.750		
6,900.0	6,733.3	6,891.2	6,733.6	28.0	27.4	-103.73	185.9	-1,363.3	314.7	259.9	54.80	5.742		
7,000.0	6,833.3	6,991.0	6,833.3	28.1	27.5	-103.75	186.2	-1,365.3	315.1	260.1	54.97	5.732		
7,100.0	6,933.3	7,091.0	6,933.3	28.2	27.6	-173.16	186.2	-1,365.4	315.1	260.0	55.13	5.716		
7,200.0	7,033.3	7,191.0	7,033.3	28.3	27.7	-173.16	186.2	-1,365.4	315.1	259.8	55.29	5.700		
7,300.0	7,133.3	7,291.0	7,133.3	28.3	27.8	-173.16	186.2	-1,365.4	315.1	259.7	55.45	5.683		
7,400.0	7,233.3	7,391.0	7,233.3	28.4	27.8	-173.16	186.2	-1,365.4	315.1	259.5	55.61	5.667		
7,500.0	7,333.3	7,491.0	7,333.3	28.5	27.9	-173.16	186.2	-1,365.4	315.1	259.4	55.77	5.650		
7,600.0	7,433.3	7,591.0	7,433.3	28.6	28.0	-173.16	186.2	-1,365.4	315.1	259.2	55.93	5.634		
7,700.0	7,533.3	7,691.0	7,533.3	28.7	28.1	-173.16	186.2	-1,365.4	315.1	259.0	56.10	5.617		
7,800.0	7,633.3	7,791.0	7,633.3	28.7	28.2	-173.16	186.2	-1,365.4	315.1	258.9	56.27	5.600		
7,900.0	7,733.3	7,891.0	7,733.3	28.8	28.3	-173.16	186.2	-1,365.4	315.1	258.7	56.44	5.584		
8,000.0	7,833.3	7,991.0	7,833.3	28.9	28.3	-173.16	186.2	-1,365.4	315.1	258.5	56.61	5.567		
8,100.0	7,933.3	8,091.0	7,933.3	29.0	28.4	-173.16	186.2	-1,365.4	315.1	258.3	56.78	5.550		
8,200.0	8,033.3	8,191.0	8,033.3	29.1	28.5	-173.16	186.2	-1,365.4	315.1	258.2	56.95	5.533		
8,300.0	8,133.3	8,291.0	8,133.3	29.2	28.6	-173.16	186.2	-1,365.4	315.1	258.0	57.13	5.516		
8,400.0	8,233.3	8,391.0	8,233.3	29.3	28.7	-173.16	186.2	-1,365.4	315.1	257.8	57.31	5.499		
8,500.0	8,333.3	8,491.0	8,333.3	29.3	28.8	-173.16	186.2	-1,365.4	315.1	257.6	57.49	5.482		
8,600.0	8,433.3	8,591.0	8,433.3	29.4	28.9	-173.16	186.2	-1,365.4	315.1	257.5	57.67	5.465		
8,700.0	8,533.3	8,691.0	8,533.3	29.5	29.0	-173.16	186.2	-1,365.4	315.1	257.3	57.85	5.447		
8,800.0	8,633.3	8,791.0	8,633.3	29.6	29.0	-173.16	186.2	-1,365.4	315.1	257.1	58.03	5.430		
8,852.0	8,685.3	8,843.0	8,685.3	29.7	29.1	-173.16	186.2	-1,365.4	315.1	257.0	58.13	5.421		
8,880.7	8,714.0	8,866.7	8,709.0	29.7	29.1	-173.16	186.2	-1,365.4	315.2	257.0	58.18	5.417 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-17D (Oxy I21 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	-122.84	-5.1	-7.9	9.4					
100.0	100.0	100.0	100.0	0.1	0.1	-122.84	-5.1	-7.9	9.4	9.1	0.30	31.692		
200.0	200.0	200.0	200.0	0.3	0.3	-122.84	-5.1	-7.9	9.4	8.8	0.65	14.561	CC, ES	
300.0	300.0	299.8	299.8	0.5	0.5	-117.13	-4.7	-9.1	10.3	9.3	0.99	10.320		
400.0	400.0	399.6	399.5	0.7	0.7	-39.08	-3.4	-12.8	12.3	10.9	1.35	9.087		
500.0	499.9	499.2	498.9	0.9	0.9	-33.25	-1.3	-19.0	14.5	12.8	1.71	8.489		
600.0	599.7	598.9	598.1	1.1	1.1	-29.28	1.6	-27.6	16.9	14.8	2.07	8.147		
700.0	699.3	698.4	697.0	1.3	1.4	-26.54	5.3	-38.7	19.3	16.9	2.44	7.926		
800.0	798.6	797.9	795.4	1.5	1.7	-24.64	9.9	-52.1	21.8	19.0	2.81	7.765		
900.0	897.5	897.3	893.4	1.8	2.0	-23.33	15.3	-68.0	24.4	21.2	3.19	7.635		
1,000.0	996.1	996.6	990.9	2.1	2.4	-22.45	21.4	-86.3	27.0	23.4	3.59	7.517		
1,100.0	1,094.2	1,095.9	1,087.7	2.5	2.8	-21.89	28.4	-107.0	29.6	25.6	3.99	7.404		
1,200.0	1,191.7	1,195.1	1,183.9	2.9	3.2	-21.57	36.2	-130.0	32.2	27.8	4.41	7.288		
1,300.0	1,288.7	1,294.2	1,279.3	3.4	3.8	-21.21	44.8	-155.3	35.2	30.3	4.85	7.249	SF	
1,400.0	1,385.7	1,393.2	1,373.9	3.8	4.3	-19.85	54.2	-183.0	40.3	35.1	5.25	7.684		
1,500.0	1,482.6	1,491.8	1,467.3	4.3	4.9	-17.92	64.3	-212.8	48.0	42.4	5.61	8.563		
1,600.0	1,579.6	1,589.9	1,559.5	4.7	5.5	-15.89	75.1	-244.8	58.2	52.3	5.94	9.804		
1,700.0	1,676.5	1,687.5	1,650.2	5.2	6.2	-14.02	86.6	-278.8	71.0	64.7	6.26	11.342		
1,800.0	1,773.5	1,784.3	1,739.3	5.6	6.9	-12.41	98.8	-314.7	86.2	79.7	6.57	13.122		
1,900.0	1,870.4	1,880.4	1,826.7	6.1	7.7	-11.06	111.5	-352.4	104.0	97.1	6.89	15.101		
2,000.0	1,967.4	1,975.5	1,912.2	6.6	8.5	-9.95	124.8	-391.8	124.3	117.1	7.21	17.245		
2,100.0	2,064.3	2,069.5	1,995.8	7.0	9.3	-9.03	138.7	-432.7	147.0	139.4	7.53	19.524		
2,200.0	2,161.3	2,162.5	2,077.3	7.5	10.2	-8.27	153.0	-475.0	172.0	164.2	7.85	21.917		
2,300.0	2,258.2	2,254.2	2,156.6	8.0	11.1	-7.64	167.8	-518.6	199.5	191.3	8.17	24.405		
2,400.0	2,355.2	2,344.6	2,233.7	8.4	12.0	-7.11	182.9	-563.3	229.2	220.7	8.50	26.974		
2,500.0	2,452.1	2,438.0	2,312.4	8.9	13.0	-6.65	199.0	-610.9	260.6	251.7	8.83	29.519		
2,600.0	2,549.1	2,532.9	2,392.4	9.4	14.0	-6.28	215.4	-659.2	292.0	282.9	9.16	31.872		
2,700.0	2,646.1	2,627.8	2,472.4	9.8	15.0	-5.98	231.7	-707.6	323.5	314.0	9.50	34.051		
2,800.0	2,743.0	2,722.7	2,552.4	10.3	16.0	-5.74	248.1	-755.9	355.0	345.2	9.84	36.074		
2,900.0	2,840.0	2,817.6	2,632.4	10.8	17.0	-5.54	264.5	-804.3	386.5	376.4	10.18	37.957		
3,000.0	2,936.9	2,912.5	2,712.4	11.2	18.0	-5.36	280.9	-852.7	418.0	407.5	10.53	39.716		
3,100.0	3,033.9	3,007.4	2,792.4	11.7	19.0	-5.21	297.2	-901.0	449.6	438.7	10.87	41.362		
3,200.0	3,130.8	3,102.3	2,872.4	12.2	20.0	-5.08	313.6	-949.4	481.1	469.9	11.21	42.905		
3,300.0	3,227.8	3,197.2	2,952.4	12.7	21.0	-4.97	330.0	-997.7	512.6	501.0	11.56	44.356		
3,400.0	3,324.7	3,292.1	3,032.4	13.1	22.0	-4.87	346.3	-1,046.1	544.1	532.2	11.90	45.721		
3,500.0	3,421.7	3,387.0	3,112.4	13.6	23.0	-4.78	362.7	-1,094.4	575.6	563.4	12.25	47.009		
3,600.0	3,518.6	3,481.9	3,192.4	14.1	24.0	-4.70	379.1	-1,142.8	607.1	594.6	12.59	48.226		
3,700.0	3,615.6	3,576.8	3,272.4	14.5	25.0	-4.63	395.4	-1,191.2	638.7	625.7	12.93	49.378		
3,800.0	3,712.5	3,671.7	3,352.4	15.0	26.1	-4.56	411.8	-1,239.5	670.2	656.9	13.28	50.469		
3,900.0	3,809.5	3,766.6	3,432.4	15.5	27.1	-4.50	428.2	-1,287.9	701.7	688.1	13.62	51.505		
4,000.0	3,906.4	3,861.5	3,512.4	15.9	28.1	-4.45	444.6	-1,336.2	733.2	719.3	13.97	52.490		
4,100.0	4,003.4	3,956.4	3,592.4	16.4	29.1	-4.40	460.9	-1,384.6	764.8	750.4	14.31	53.427		
4,200.0	4,100.3	4,051.3	3,672.4	16.9	30.1	-4.35	477.3	-1,433.0	796.3	781.6	14.66	54.320		
4,300.0	4,197.3	4,146.2	3,752.4	17.4	31.1	-4.31	493.7	-1,481.3	827.8	812.8	15.00	55.171		
4,400.0	4,294.2	4,241.1	3,832.4	17.8	32.1	-4.27	510.0	-1,529.7	859.3	844.0	15.35	55.985		
4,500.0	4,391.2	4,336.0	3,912.4	18.3	33.1	-4.23	526.4	-1,578.0	890.9	875.2	15.69	56.762		
4,600.0	4,488.2	4,430.9	3,992.4	18.8	34.1	-4.20	542.8	-1,626.4	922.4	906.3	16.04	57.506		
4,700.0	4,585.1	4,525.8	4,072.3	19.2	35.1	-4.17	559.1	-1,674.8	953.9	937.5	16.38	58.219		
4,800.0	4,682.1	4,620.7	4,152.3	19.7	36.2	-4.14	575.5	-1,723.1	985.4	968.7	16.73	58.902		
4,900.0	4,779.0	4,715.6	4,232.3	20.2	37.2	-4.11	591.9	-1,771.5	1,017.0	999.9	17.08	59.558		
5,000.0	4,876.0	4,810.5	4,312.3	20.7	38.2	-4.08	608.3	-1,819.8	1,048.5	1,031.1	17.42	60.187		
5,100.0	4,972.9	4,905.4	4,392.3	21.1	39.2	-4.06	624.6	-1,868.2	1,080.0	1,062.3	17.77	60.792		

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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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												NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-17D (Oxy I21 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)							
5,200.0	5,069.9	5,000.3	4,472.3	21.6	40.2	-4.04	641.0	-1,916.5	1,111.5	1,093.4	18.11	61.374					

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-1D (Oxy I21 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	150.65	-143.5	80.7	164.6					
100.0	100.0	100.0	100.0	0.1	0.1	150.65	-143.5	80.7	164.6	164.3	0.30	554.892		
200.0	200.0	200.0	200.0	0.3	0.3	150.65	-143.5	80.7	164.6	164.0	0.65	254.950		
300.0	300.0	300.0	300.0	0.5	0.5	150.65	-143.5	80.7	164.6	163.6	0.99	165.494 CC, ES		
400.0	400.0	396.5	396.5	0.7	0.7	-139.98	-144.7	80.6	166.7	165.4	1.34	124.530		
500.0	499.9	492.7	492.6	0.9	0.8	-140.07	-148.4	80.4	172.9	171.2	1.69	102.483		
600.0	599.7	588.4	588.1	1.1	1.0	-140.20	-154.4	80.0	183.2	181.1	2.04	89.596		
700.0	699.3	683.4	682.8	1.3	1.2	-140.35	-162.7	79.5	197.5	195.1	2.42	81.775		
800.0	798.6	777.5	776.3	1.5	1.5	-140.50	-173.3	78.9	215.9	213.1	2.80	76.992		
900.0	897.5	870.4	868.3	1.8	1.7	-140.63	-185.9	78.1	238.2	235.0	3.21	74.127		
1,000.0	996.1	961.9	958.6	2.1	2.0	-140.73	-200.6	77.2	264.5	260.8	3.65	72.510		
1,100.0	1,094.2	1,051.9	1,047.0	2.5	2.3	-140.79	-217.1	76.1	294.6	290.5	4.11	71.720		
1,200.0	1,191.7	1,140.1	1,133.3	2.9	2.7	-140.80	-235.3	75.0	328.4	323.8	4.59	71.482		
1,300.0	1,288.7	1,226.5	1,217.4	3.4	3.0	-140.95	-255.1	73.8	365.6	360.5	5.11	71.590		
1,400.0	1,385.7	1,311.6	1,299.8	3.8	3.4	-141.05	-276.4	72.5	404.7	399.0	5.64	71.753		
1,500.0	1,482.6	1,395.4	1,380.4	4.3	3.8	-140.98	-299.2	71.0	445.4	439.2	6.19	71.982		
1,600.0	1,579.6	1,484.6	1,465.9	4.7	4.3	-140.82	-324.7	69.5	487.2	480.5	6.76	72.073		
1,700.0	1,676.5	1,575.4	1,552.9	5.2	4.7	-140.68	-350.7	67.8	529.1	521.7	7.34	72.052		
1,800.0	1,773.5	1,666.2	1,639.9	5.6	5.2	-140.56	-376.7	66.2	570.9	563.0	7.93	71.994		
1,900.0	1,870.4	1,757.0	1,726.9	6.1	5.7	-140.46	-402.8	64.6	612.8	604.3	8.52	71.915		
2,000.0	1,967.4	1,847.8	1,813.9	6.6	6.1	-140.37	-428.8	63.0	654.6	645.5	9.11	71.823		
2,100.0	2,064.3	1,938.7	1,900.9	7.0	6.6	-140.29	-454.8	61.4	696.5	686.8	9.71	71.726		
2,200.0	2,161.3	2,029.5	1,987.9	7.5	7.1	-140.22	-480.8	59.8	738.4	728.1	10.31	71.627		
2,300.0	2,258.2	2,120.3	2,074.8	8.0	7.6	-140.16	-506.8	58.2	780.2	769.3	10.91	71.528		
2,400.0	2,355.2	2,211.1	2,161.8	8.4	8.0	-140.10	-532.8	56.5	822.1	810.6	11.51	71.431		
2,500.0	2,452.1	2,301.9	2,248.8	8.9	8.5	-140.05	-558.8	54.9	864.0	851.9	12.11	71.337		
2,600.0	2,549.1	2,392.7	2,335.8	9.4	9.0	-140.01	-584.9	53.3	905.8	893.1	12.71	71.247		
2,700.0	2,646.1	2,483.5	2,422.8	9.8	9.5	-139.96	-610.9	51.7	947.7	934.4	13.32	71.160		
2,800.0	2,743.0	2,574.3	2,509.8	10.3	9.9	-139.93	-636.9	50.1	989.6	975.6	13.92	71.077		
2,900.0	2,840.0	2,665.2	2,596.8	10.8	10.4	-139.89	-662.9	48.5	1,031.4	1,016.9	14.53	70.998		
3,000.0	2,936.9	2,756.0	2,683.8	11.2	10.9	-139.86	-688.9	46.9	1,073.3	1,058.2	15.13	70.922 SF		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-2D (Oxy I21 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	146.89	-50.6	33.0	60.4						
100.0	100.0	100.0	100.0	0.1	0.1	146.89	-50.6	33.0	60.4	60.1	0.30	203.708			
200.0	200.0	200.0	200.0	0.3	0.3	146.89	-50.6	33.0	60.4	59.8	0.65	93.596	CC, ES		
300.0	300.0	298.6	298.6	0.5	0.5	147.51	-51.9	33.1	61.6	60.6	0.99	61.966			
400.0	400.0	397.1	397.0	0.7	0.7	-142.04	-55.7	33.2	65.9	64.6	1.34	49.118			
500.0	499.9	495.2	494.9	0.9	0.9	-141.39	-62.0	33.4	74.6	72.9	1.70	43.969			
600.0	599.7	592.5	591.8	1.1	1.1	-141.10	-70.8	33.7	87.6	85.5	2.06	42.480	SF		
700.0	699.3	688.9	687.6	1.3	1.3	-141.05	-81.9	34.1	104.8	102.3	2.44	42.934			
800.0	798.6	784.1	781.8	1.5	1.6	-141.13	-95.2	34.5	126.1	123.3	2.84	44.472			
900.0	897.5	877.8	874.3	1.8	1.9	-141.26	-110.6	35.1	151.5	148.3	3.25	46.614			
1,000.0	996.1	969.9	964.7	2.1	2.3	-141.39	-127.9	35.7	180.9	177.2	3.69	49.074			
1,100.0	1,094.2	1,060.1	1,052.9	2.5	2.6	-141.49	-147.0	36.3	214.3	210.1	4.15	51.681			
1,200.0	1,191.7	1,151.5	1,141.8	2.9	3.0	-141.63	-168.0	37.0	251.0	246.4	4.63	54.203			
1,300.0	1,288.7	1,243.8	1,231.6	3.4	3.4	-142.11	-189.3	37.8	289.6	284.4	5.14	56.337			
1,400.0	1,385.7	1,335.9	1,321.2	3.8	3.8	-142.65	-210.6	38.5	328.3	322.6	5.66	57.991			
1,500.0	1,482.6	1,428.1	1,410.9	4.3	4.2	-143.07	-231.9	39.2	367.1	360.9	6.19	59.321			
1,600.0	1,579.6	1,520.2	1,500.5	4.7	4.6	-143.41	-253.2	40.0	405.9	399.1	6.72	60.410			
1,700.0	1,676.5	1,612.4	1,590.2	5.2	5.0	-143.69	-274.5	40.7	444.7	437.4	7.25	61.315			
1,800.0	1,773.5	1,704.5	1,679.8	5.6	5.4	-143.93	-295.8	41.4	483.5	475.7	7.79	62.080			
1,900.0	1,870.4	1,796.7	1,769.5	6.1	5.8	-144.13	-317.1	42.2	522.3	513.9	8.33	62.732			
2,000.0	1,967.4	1,888.8	1,859.1	6.6	6.2	-144.30	-338.5	42.9	561.1	552.2	8.86	63.294			
2,100.0	2,064.3	1,981.0	1,948.8	7.0	6.6	-144.45	-359.8	43.6	599.9	590.5	9.40	63.784			
2,200.0	2,161.3	2,073.1	2,038.4	7.5	7.0	-144.59	-381.1	44.3	638.7	628.8	9.95	64.215			
2,300.0	2,258.2	2,165.3	2,128.1	8.0	7.4	-144.70	-402.4	45.1	677.5	667.0	10.49	64.595			
2,400.0	2,355.2	2,257.4	2,217.7	8.4	7.8	-144.81	-423.7	45.8	716.3	705.3	11.03	64.934			
2,500.0	2,452.1	2,349.6	2,307.4	8.9	8.2	-144.90	-445.0	46.5	755.2	743.6	11.58	65.238			
2,600.0	2,549.1	2,441.7	2,397.0	9.4	8.6	-144.99	-466.3	47.3	794.0	781.9	12.12	65.511			
2,700.0	2,646.1	2,533.9	2,486.7	9.8	9.0	-145.06	-487.6	48.0	832.8	820.2	12.66	65.759			
2,800.0	2,743.0	2,626.0	2,576.3	10.3	9.4	-145.13	-508.9	48.7	871.6	858.4	13.21	65.984			
2,900.0	2,840.0	2,718.2	2,666.0	10.8	9.8	-145.20	-530.2	49.5	910.5	896.7	13.76	66.190			
3,000.0	2,936.9	2,810.3	2,755.6	11.2	10.2	-145.26	-551.5	50.2	949.3	935.0	14.30	66.378			
3,100.0	3,033.9	2,902.5	2,845.3	11.7	10.6	-145.31	-572.8	50.9	988.1	973.3	14.85	66.551			
3,200.0	3,130.8	2,994.6	2,934.9	12.2	11.0	-145.36	-594.1	51.6	1,027.0	1,011.6	15.39	66.711			
3,300.0	3,227.8	3,086.8	3,024.6	12.7	11.4	-145.41	-615.4	52.4	1,065.8	1,049.9	15.94	66.859			
3,400.0	3,324.7	3,178.9	3,114.2	13.1	11.8	-145.45	-636.7	53.1	1,104.6	1,088.1	16.49	66.996			

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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		NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-3D (Oxy I21 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	149.63	-124.2	72.8	144.0						
100.0	100.0	100.0	100.0	0.1	0.1	149.63	-124.2	72.8	144.0	143.7	0.30	485.219			
200.0	200.0	200.0	200.0	0.3	0.3	149.63	-124.2	72.8	144.0	143.3	0.65	222.939			
300.0	300.0	300.0	300.0	0.5	0.5	149.63	-124.2	72.8	144.0	143.0	0.99	144.715 CC, ES			
400.0	400.0	400.0	400.0	0.7	0.7	-141.29	-124.2	72.8	145.0	143.6	1.34	107.851			
500.0	499.9	499.9	499.9	0.9	0.8	-142.21	-124.2	72.8	148.1	146.4	1.70	87.298			
600.0	599.7	596.6	596.6	1.1	1.0	-143.33	-125.4	72.7	154.3	152.2	2.05	75.355			
700.0	699.3	692.9	692.8	1.3	1.2	-144.29	-129.1	72.4	164.6	162.2	2.41	68.413			
800.0	798.6	788.5	788.2	1.5	1.4	-145.06	-135.1	71.8	179.1	176.3	2.78	64.484			
900.0	897.5	883.2	882.6	1.8	1.6	-145.63	-143.3	71.1	197.6	194.4	3.16	62.452			
1,000.0	996.1	976.8	975.5	2.1	1.8	-146.00	-153.8	70.1	220.0	216.4	3.57	61.642			
1,100.0	1,094.2	1,069.0	1,066.9	2.5	2.0	-146.20	-166.3	69.0	246.3	242.3	4.00	61.621 SF			
1,200.0	1,191.7	1,160.3	1,157.0	2.9	2.3	-146.27	-180.9	67.6	276.5	272.0	4.45	62.137			
1,300.0	1,288.7	1,254.8	1,250.2	3.4	2.6	-146.55	-196.8	66.2	309.0	304.1	4.93	62.698			
1,400.0	1,385.7	1,349.3	1,343.3	3.8	2.9	-146.90	-212.7	64.7	341.8	336.4	5.42	63.067			
1,500.0	1,482.6	1,443.7	1,436.4	4.3	3.2	-147.19	-228.7	63.3	374.6	368.7	5.92	63.309			
1,600.0	1,579.6	1,538.2	1,529.4	4.7	3.5	-147.43	-244.6	61.9	407.4	401.0	6.42	63.467			
1,700.0	1,676.5	1,632.6	1,622.5	5.2	3.8	-147.64	-260.5	60.4	440.2	433.3	6.93	63.568			
1,800.0	1,773.5	1,727.1	1,715.6	5.6	4.1	-147.82	-276.4	59.0	473.0	465.6	7.43	63.630			
1,900.0	1,870.4	1,821.5	1,808.7	6.1	4.4	-147.97	-292.3	57.5	505.9	497.9	7.95	63.666			
2,000.0	1,967.4	1,916.0	1,901.8	6.6	4.7	-148.11	-308.2	56.1	538.7	530.2	8.46	63.682			
2,100.0	2,064.3	2,010.4	1,994.9	7.0	5.0	-148.23	-324.2	54.6	571.5	562.5	8.97	63.686			
2,200.0	2,161.3	2,104.9	2,088.0	7.5	5.4	-148.34	-340.1	53.2	604.3	594.8	9.49	63.680			
2,300.0	2,258.2	2,199.3	2,181.1	8.0	5.7	-148.44	-356.0	51.7	637.2	627.2	10.01	63.667			
2,400.0	2,355.2	2,293.8	2,274.2	8.4	6.0	-148.52	-371.9	50.3	670.0	659.5	10.53	63.650			
2,500.0	2,452.1	2,388.3	2,367.3	8.9	6.3	-148.60	-387.8	48.8	702.8	691.8	11.05	63.630			
2,600.0	2,549.1	2,482.7	2,460.4	9.4	6.6	-148.67	-403.8	47.4	735.6	724.1	11.57	63.607			
2,700.0	2,646.1	2,577.2	2,553.4	9.8	7.0	-148.74	-419.7	45.9	768.5	756.4	12.09	63.584			
2,800.0	2,743.0	2,671.6	2,646.5	10.3	7.3	-148.80	-435.6	44.5	801.3	788.7	12.61	63.559			
2,900.0	2,840.0	2,766.1	2,739.6	10.8	7.6	-148.86	-451.5	43.0	834.1	821.0	13.13	63.535			
3,000.0	2,936.9	2,860.5	2,832.7	11.2	7.9	-148.91	-467.4	41.6	867.0	853.3	13.65	63.510			
3,100.0	3,033.9	2,955.0	2,925.8	11.7	8.2	-148.95	-483.3	40.1	899.8	885.6	14.17	63.485			
3,200.0	3,130.8	3,049.4	3,018.9	12.2	8.6	-149.00	-499.3	38.7	932.6	918.0	14.70	63.461			
3,300.0	3,227.8	3,143.9	3,112.0	12.7	8.9	-149.04	-515.2	37.2	965.5	950.3	15.22	63.437			
3,400.0	3,324.7	3,238.3	3,205.1	13.1	9.2	-149.08	-531.1	35.8	998.3	982.6	15.74	63.413			
3,500.0	3,421.7	3,332.8	3,298.2	13.6	9.5	-149.11	-547.0	34.3	1,031.2	1,014.9	16.27	63.391			
3,600.0	3,518.6	3,427.2	3,391.3	14.1	9.8	-149.15	-562.9	32.9	1,064.0	1,047.2	16.79	63.368			
3,700.0	3,615.6	3,521.7	3,484.4	14.5	10.2	-149.18	-578.9	31.5	1,096.8	1,079.5	17.31	63.347			

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-4D (Oxy I21 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	151.48	-118.4	64.3	134.7					
100.0	100.0	100.0	100.0	0.1	0.1	151.48	-118.4	64.3	134.7	134.4	0.30	454.085		
200.0	200.0	200.0	200.0	0.3	0.3	151.48	-118.4	64.3	134.7	134.1	0.65	208.634		
300.0	300.0	300.0	300.0	0.5	0.5	151.48	-118.4	64.3	134.7	133.7	0.99	135.429 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-139.47	-118.4	64.3	135.7	134.4	1.34	100.956		
500.0	499.9	499.9	499.9	0.9	0.8	-140.50	-118.4	64.3	138.7	137.0	1.70	81.773		
600.0	599.7	599.7	599.7	1.1	1.0	-142.11	-118.4	64.3	143.8	141.8	2.05	70.054		
700.0	699.3	696.4	696.4	1.3	1.2	-143.80	-119.6	64.2	152.1	149.7	2.41	63.089		
800.0	798.6	792.6	792.5	1.5	1.4	-145.20	-123.2	63.7	164.5	161.7	2.78	59.234		
900.0	897.5	888.0	887.7	1.8	1.5	-146.27	-129.1	62.9	180.9	177.8	3.16	57.345		
1,000.0	996.1	982.5	981.8	2.1	1.7	-147.01	-137.3	61.7	201.3	197.8	3.55	56.721 SF		
1,100.0	1,094.2	1,077.8	1,076.6	2.5	2.0	-147.56	-147.6	60.3	225.4	221.4	3.96	56.865		
1,200.0	1,191.7	1,174.1	1,172.3	2.9	2.2	-148.23	-158.3	58.8	251.8	247.4	4.39	57.310		
1,300.0	1,288.7	1,270.0	1,267.5	3.4	2.4	-149.08	-168.9	57.4	280.1	275.3	4.83	57.950		
1,400.0	1,385.7	1,365.7	1,362.7	3.8	2.6	-149.90	-179.5	55.9	308.7	303.5	5.28	58.462		
1,500.0	1,482.6	1,461.4	1,457.8	4.3	2.9	-150.57	-190.1	54.5	337.4	331.7	5.73	58.875		
1,600.0	1,579.6	1,557.2	1,553.0	4.7	3.1	-151.14	-200.7	53.0	366.1	359.9	6.18	59.215		
1,700.0	1,676.5	1,652.9	1,648.1	5.2	3.3	-151.63	-211.3	51.5	394.8	388.1	6.63	59.499		
1,800.0	1,773.5	1,748.7	1,743.2	5.6	3.6	-152.05	-221.9	50.1	423.5	416.4	7.09	59.740		
1,900.0	1,870.4	1,844.4	1,838.4	6.1	3.8	-152.41	-232.5	48.6	452.3	444.7	7.54	59.947		
2,000.0	1,967.4	1,940.1	1,933.5	6.6	4.1	-152.74	-243.2	47.1	481.0	473.0	8.00	60.127		
2,100.0	2,064.3	2,035.9	2,028.7	7.0	4.3	-153.02	-253.8	45.7	509.8	501.4	8.46	60.284		
2,200.0	2,161.3	2,131.6	2,123.8	7.5	4.6	-153.28	-264.4	44.2	538.6	529.7	8.91	60.423		
2,300.0	2,258.2	2,227.3	2,218.9	8.0	4.8	-153.51	-275.0	42.8	567.4	558.0	9.37	60.546		
2,400.0	2,355.2	2,323.1	2,314.1	8.4	5.0	-153.72	-285.6	41.3	596.2	586.4	9.83	60.656		
2,500.0	2,452.1	2,418.8	2,409.2	8.9	5.3	-153.91	-296.2	39.8	625.0	614.7	10.29	60.755		
2,600.0	2,549.1	2,514.6	2,504.3	9.4	5.5	-154.08	-306.8	38.4	653.8	643.1	10.75	60.845		
2,700.0	2,646.1	2,610.3	2,599.5	9.8	5.8	-154.24	-317.4	36.9	682.7	671.5	11.20	60.926		
2,800.0	2,743.0	2,706.0	2,694.6	10.3	6.0	-154.38	-328.0	35.5	711.5	699.8	11.66	61.000		
2,900.0	2,840.0	2,801.8	2,789.8	10.8	6.3	-154.52	-338.6	34.0	740.3	728.2	12.12	61.068		
3,000.0	2,936.9	2,897.5	2,884.9	11.2	6.5	-154.64	-349.2	32.5	769.2	756.6	12.58	61.131		
3,100.0	3,033.9	2,993.3	2,980.0	11.7	6.8	-154.75	-359.8	31.1	798.0	785.0	13.04	61.188		
3,200.0	3,130.8	3,089.0	3,075.2	12.2	7.0	-154.86	-370.4	29.6	826.8	813.3	13.50	61.241		
3,300.0	3,227.8	3,184.7	3,170.3	12.7	7.3	-154.96	-381.0	28.2	855.7	841.7	13.96	61.291		
3,400.0	3,324.7	3,280.5	3,265.5	13.1	7.5	-155.05	-391.6	26.7	884.5	870.1	14.42	61.337		
3,500.0	3,421.7	3,376.2	3,360.6	13.6	7.8	-155.14	-402.2	25.2	913.4	898.5	14.88	61.380		
3,600.0	3,518.6	3,472.0	3,455.7	14.1	8.0	-155.22	-412.9	23.8	942.2	926.9	15.34	61.420		
3,700.0	3,615.6	3,567.7	3,550.9	14.5	8.3	-155.30	-423.5	22.3	971.1	955.3	15.80	61.458		
3,800.0	3,712.5	3,663.4	3,646.0	15.0	8.5	-155.37	-434.1	20.9	999.9	983.7	16.26	61.493		
3,900.0	3,809.5	3,759.2	3,741.2	15.5	8.8	-155.44	-444.7	19.4	1,028.8	1,012.1	16.72	61.526		
4,000.0	3,906.4	3,854.9	3,836.3	15.9	9.0	-155.50	-455.3	17.9	1,057.6	1,040.5	17.18	61.557		
4,100.0	4,003.4	3,950.7	3,931.4	16.4	9.3	-155.57	-465.9	16.5	1,086.5	1,068.9	17.64	61.587		

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-5D (Oxy I21 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	151.97	-106.0	56.4	120.1							
100.0	100.0	100.0	100.0	0.1	0.1	151.97	-106.0	56.4	120.1	119.8	0.30	404.712				
200.0	200.0	200.0	200.0	0.3	0.3	151.97	-106.0	56.4	120.1	119.4	0.65	185.949				
300.0	300.0	300.0	300.0	0.5	0.5	151.97	-106.0	56.4	120.1	119.1	0.99	120.704	CC, ES			
400.0	400.0	400.0	400.0	0.7	0.7	-139.03	-106.0	56.4	121.1	119.7	1.34	90.053				
500.0	499.9	499.9	499.9	0.9	0.8	-140.19	-106.0	56.4	124.1	122.4	1.70	73.122				
600.0	599.7	599.7	599.7	1.1	1.0	-142.00	-106.0	56.4	129.2	127.1	2.05	62.899				
700.0	699.3	696.8	696.8	1.3	1.2	-143.87	-107.2	56.2	137.4	135.0	2.41	56.963				
800.0	798.6	793.4	793.3	1.5	1.4	-145.36	-110.8	55.5	149.6	146.9	2.78	53.854				
900.0	897.5	889.4	889.1	1.8	1.5	-146.44	-116.7	54.3	165.8	162.7	3.16	52.521				
1,000.0	996.1	987.5	986.9	2.1	1.7	-147.47	-124.0	52.9	185.1	181.5	3.55	52.092	SF			
1,100.0	1,094.2	1,085.0	1,084.2	2.5	1.9	-148.66	-131.1	51.5	206.5	202.6	3.96	52.211				
1,200.0	1,191.7	1,182.0	1,180.9	2.9	2.1	-149.91	-138.3	50.1	230.3	225.9	4.37	52.761				
1,300.0	1,288.7	1,278.5	1,277.1	3.4	2.3	-151.24	-145.4	48.7	256.1	251.3	4.78	53.587				
1,400.0	1,385.7	1,374.8	1,373.2	3.8	2.5	-152.42	-152.5	47.3	282.2	277.0	5.20	54.318				
1,500.0	1,482.6	1,471.2	1,469.3	4.3	2.7	-153.41	-159.6	45.9	308.4	302.8	5.61	54.962				
1,600.0	1,579.6	1,567.6	1,565.4	4.7	2.9	-154.24	-166.7	44.5	334.7	328.7	6.03	55.534				
1,700.0	1,676.5	1,664.0	1,661.5	5.2	3.1	-154.94	-173.7	43.1	361.0	354.6	6.44	56.045				
1,800.0	1,773.5	1,760.4	1,757.6	5.6	3.4	-155.56	-180.8	41.7	387.4	380.6	6.86	56.503				
1,900.0	1,870.4	1,856.7	1,853.7	6.1	3.6	-156.09	-187.9	40.3	413.9	406.6	7.27	56.917				
2,000.0	1,967.4	1,953.1	1,949.8	6.6	3.8	-156.56	-195.0	38.9	440.3	432.6	7.69	57.293				
2,100.0	2,064.3	2,049.5	2,045.9	7.0	4.0	-156.98	-202.1	37.5	466.8	458.7	8.10	57.635				
2,200.0	2,161.3	2,145.9	2,142.1	7.5	4.2	-157.35	-209.2	36.1	493.3	484.8	8.51	57.948				
2,300.0	2,258.2	2,242.3	2,238.2	8.0	4.4	-157.69	-216.3	34.7	519.8	510.9	8.93	58.235				
2,400.0	2,355.2	2,338.6	2,334.3	8.4	4.6	-157.99	-223.4	33.3	546.3	537.0	9.34	58.499				
2,500.0	2,452.1	2,435.0	2,430.4	8.9	4.8	-158.26	-230.5	31.9	572.9	563.1	9.75	58.744				
2,600.0	2,549.1	2,531.4	2,526.5	9.4	5.0	-158.51	-237.6	30.5	599.4	589.3	10.16	58.970				
2,700.0	2,646.1	2,627.8	2,622.6	9.8	5.2	-158.74	-244.7	29.1	626.0	615.4	10.58	59.180				
2,800.0	2,743.0	2,724.1	2,718.7	10.3	5.4	-158.95	-251.8	27.7	652.6	641.6	10.99	59.376				
2,900.0	2,840.0	2,820.5	2,814.8	10.8	5.6	-159.15	-258.9	26.3	679.1	667.7	11.40	59.558				
3,000.0	2,936.9	2,916.9	2,910.9	11.2	5.8	-159.32	-266.0	24.9	705.7	693.9	11.82	59.729				
3,100.0	3,033.9	3,013.3	3,007.0	11.7	6.0	-159.49	-273.0	23.5	732.3	720.1	12.23	59.889				
3,200.0	3,130.8	3,109.7	3,103.1	12.2	6.3	-159.64	-280.1	22.1	758.9	746.3	12.64	60.040				
3,300.0	3,227.8	3,206.0	3,199.2	12.7	6.5	-159.79	-287.2	20.7	785.5	772.5	13.05	60.181				
3,400.0	3,324.7	3,302.4	3,295.3	13.1	6.7	-159.92	-294.3	19.3	812.1	798.7	13.46	60.315				
3,500.0	3,421.7	3,398.8	3,391.4	13.6	6.9	-160.05	-301.4	17.9	838.7	824.9	13.88	60.441				
3,600.0	3,518.6	3,495.2	3,487.6	14.1	7.1	-160.17	-308.5	16.5	865.4	851.1	14.29	60.560				
3,700.0	3,615.6	3,591.5	3,583.7	14.5	7.3	-160.28	-315.6	15.1	892.0	877.3	14.70	60.673				
3,800.0	3,712.5	3,687.9	3,679.8	15.0	7.5	-160.38	-322.7	13.7	918.6	903.5	15.11	60.780				
3,900.0	3,809.5	3,784.3	3,775.9	15.5	7.7	-160.48	-329.8	12.3	945.2	929.7	15.53	60.882				
4,000.0	3,906.4	3,880.7	3,872.0	15.9	7.9	-160.58	-336.9	10.9	971.8	955.9	15.94	60.978				
4,100.0	4,003.4	3,977.1	3,968.1	16.4	8.1	-160.66	-344.0	9.5	998.5	982.1	16.35	61.070				
4,200.0	4,100.3	4,073.4	4,064.2	16.9	8.4	-160.75	-351.1	8.1	1,025.1	1,008.3	16.76	61.158				
4,300.0	4,197.3	4,169.8	4,160.3	17.4	8.6	-160.83	-358.2	6.7	1,051.7	1,034.6	17.17	61.242				
4,400.0	4,294.2	4,266.2	4,256.4	17.8	8.8	-160.90	-365.2	5.3	1,078.4	1,060.8	17.59	61.322				
4,500.0	4,391.2	4,362.6	4,352.5	18.3	9.0	-160.98	-372.3	3.9	1,105.0	1,087.0	18.00	61.398				

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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		NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-6D (Oxy I21 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	300.0	300.0	0.0	0.0	146.85	-37.2	24.3	44.4						
100.0	100.0	400.0	400.0	0.1	0.1	146.85	-37.2	24.3	44.4	44.1	0.30	149.559			
200.0	200.0	500.0	500.0	0.3	0.3	146.85	-37.2	24.3	44.4	43.7	0.65	68.716	CC, ES		
300.0	300.0	598.8	598.8	0.5	0.5	146.62	-38.1	25.1	45.7	44.7	0.99	45.896			
400.0	400.0	697.5	697.4	0.7	0.7	-145.39	-41.0	27.6	50.6	49.2	1.34	37.742			
500.0	499.9	795.9	795.6	0.9	0.9	-148.09	-45.7	31.8	60.2	58.5	1.69	35.677	SF		
600.0	599.7	895.0	894.5	1.1	1.1	-151.07	-51.0	36.5	73.0	70.9	2.04	35.813			
700.0	699.3	993.8	993.0	1.3	1.3	-153.90	-56.4	41.1	88.2	85.8	2.39	36.930			
800.0	798.6	1,092.1	1,091.0	1.5	1.5	-156.43	-61.6	45.8	106.0	103.3	2.74	38.680			
900.0	897.5	1,189.9	1,188.6	1.8	1.7	-158.65	-66.9	50.4	126.3	123.2	3.09	40.864			
1,000.0	996.1	1,287.1	1,285.6	2.1	1.9	-160.56	-72.1	55.0	149.2	145.7	3.44	43.364			
1,100.0	1,094.2	1,383.7	1,381.9	2.5	2.1	-162.19	-77.3	59.5	174.6	170.8	3.79	46.103			
1,200.0	1,191.7	1,479.6	1,477.5	2.9	2.3	-163.60	-82.5	64.0	202.5	198.4	4.13	49.028			
1,300.0	1,288.7	1,574.8	1,572.5	3.4	2.5	-164.86	-87.6	68.5	232.7	228.2	4.48	51.946			
1,400.0	1,385.7	1,670.0	1,667.5	3.8	2.7	-165.88	-92.7	73.0	263.1	258.3	4.83	54.457			
1,500.0	1,482.6	1,765.1	1,762.4	4.3	2.9	-166.70	-97.9	77.5	293.6	288.4	5.18	56.646			
1,600.0	1,579.6	1,867.5	1,864.5	4.7	3.1	-167.46	-102.6	81.7	323.3	317.7	5.54	58.308			
1,700.0	1,676.5	1,972.5	1,969.4	5.2	3.3	-168.23	-105.3	84.1	350.5	344.6	5.90	59.354			
1,800.0	1,773.5	2,076.5	2,073.5	5.6	3.5	-169.01	-106.0	84.6	375.3	369.0	6.26	59.944			
1,900.0	1,870.4	2,173.5	2,170.4	6.1	3.6	-169.68	-106.0	84.6	399.4	392.8	6.60	60.481			
2,000.0	1,967.4	2,270.4	2,267.4	6.6	3.8	-170.27	-106.0	84.6	423.5	416.6	6.95	60.980			
2,100.0	2,064.3	2,367.4	2,364.3	7.0	3.9	-170.80	-106.0	84.6	447.7	440.4	7.29	61.444			
2,200.0	2,161.3	2,464.3	2,461.3	7.5	4.1	-171.28	-106.0	84.6	471.9	464.3	7.63	61.874			
2,300.0	2,258.2	2,561.3	2,558.2	8.0	4.2	-171.71	-106.0	84.6	496.2	488.2	7.97	62.275			
2,400.0	2,355.2	2,658.2	2,655.2	8.4	4.4	-172.10	-106.0	84.6	520.4	512.1	8.31	62.647			
2,500.0	2,452.1	2,755.2	2,752.1	8.9	4.6	-172.45	-106.0	84.6	544.7	536.1	8.65	62.994			
2,600.0	2,549.1	2,852.1	2,849.1	9.4	4.7	-172.77	-106.0	84.6	569.0	560.0	8.99	63.318			
2,700.0	2,646.1	2,949.1	2,946.1	9.8	4.9	-173.07	-106.0	84.6	593.4	584.0	9.33	63.621			
2,800.0	2,743.0	3,046.1	3,043.0	10.3	5.0	-173.35	-106.0	84.6	617.7	608.0	9.67	63.905			
2,900.0	2,840.0	3,143.0	3,140.0	10.8	5.2	-173.60	-106.0	84.6	642.0	632.0	10.01	64.171			
3,000.0	2,936.9	3,240.0	3,236.9	11.2	5.4	-173.83	-106.0	84.6	666.4	656.1	10.34	64.420			
3,100.0	3,033.9	3,336.9	3,333.9	11.7	5.5	-174.05	-106.0	84.6	690.8	680.1	10.68	64.655			
3,200.0	3,130.8	3,433.9	3,430.8	12.2	5.7	-174.25	-106.0	84.6	715.1	704.1	11.02	64.876			
3,300.0	3,227.8	3,530.8	3,527.8	12.7	5.8	-174.44	-106.0	84.6	739.5	728.2	11.36	65.084			
3,400.0	3,324.7	3,627.8	3,624.7	13.1	6.0	-174.62	-106.0	84.6	763.9	752.2	11.70	65.281			
3,500.0	3,421.7	3,724.7	3,721.7	13.6	6.2	-174.79	-106.0	84.6	788.3	776.3	12.04	65.467			
3,600.0	3,518.6	3,821.7	3,818.6	14.1	6.3	-174.95	-106.0	84.6	812.7	800.4	12.38	65.643			
3,700.0	3,615.6	3,918.6	3,915.6	14.5	6.5	-175.09	-106.0	84.6	837.1	824.4	12.72	65.809			
3,800.0	3,712.5	4,015.6	4,012.5	15.0	6.7	-175.23	-106.0	84.6	861.6	848.5	13.06	65.968			
3,900.0	3,809.5	4,112.5	4,109.5	15.5	6.8	-175.36	-106.0	84.6	886.0	872.6	13.40	66.118			
4,000.0	3,906.4	4,209.5	4,206.4	15.9	7.0	-175.49	-106.0	84.6	910.4	896.7	13.74	66.261			
4,100.0	4,003.4	4,306.4	4,303.4	16.4	7.1	-175.61	-106.0	84.6	934.8	920.8	14.08	66.398			
4,200.0	4,100.3	4,403.4	4,400.3	16.9	7.3	-175.72	-106.0	84.6	959.3	944.8	14.42	66.527			
4,300.0	4,197.3	4,500.3	4,497.3	17.4	7.5	-175.83	-106.0	84.6	983.7	968.9	14.76	66.651			
4,400.0	4,294.2	4,597.3	4,594.2	17.8	7.6	-175.93	-106.0	84.6	1,008.1	993.0	15.10	66.770			
4,500.0	4,391.2	4,694.2	4,691.2	18.3	7.8	-176.02	-106.0	84.6	1,032.6	1,017.1	15.44	66.883			
4,600.0	4,488.2	4,791.2	4,788.2	18.8	8.0	-176.12	-106.0	84.6	1,057.0	1,041.2	15.78	66.991			
4,700.0	4,585.1	4,888.2	4,885.1	19.2	8.1	-176.20	-106.0	84.6	1,081.5	1,065.4	16.12	67.094			
4,800.0	4,682.1	4,985.1	4,982.1	19.7	8.3	-176.29	-106.0	84.6	1,105.9	1,089.5	16.46	67.194			

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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-7D (Oxy I21 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	146.93	-25.1	16.4	30.0					
100.0	100.0	100.0	100.0	0.1	0.1	146.93	-25.1	16.4	30.0	29.7	0.30	101.080		
200.0	200.0	200.0	200.0	0.3	0.3	146.93	-25.1	16.4	30.0	29.3	0.65	46.442		
300.0	300.0	300.0	300.0	0.5	0.5	146.93	-25.1	16.4	30.0	29.0	0.99	30.147 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-145.09	-25.1	16.4	31.1	29.7	1.34	23.103		
500.0	499.9	499.9	499.9	0.9	0.8	-148.81	-25.1	16.4	34.3	32.7	1.69	20.267		
600.0	599.7	600.4	600.4	1.1	1.0	-155.10	-23.8	16.5	39.2	37.2	2.05	19.165		
700.0	699.3	700.6	700.5	1.3	1.2	-163.78	-19.9	16.9	45.5	43.1	2.40	18.980 SF		
800.0	798.6	800.3	800.0	1.5	1.4	-173.13	-13.5	17.5	54.2	51.4	2.75	19.675		
900.0	897.5	899.3	898.8	1.8	1.6	179.61	-6.3	18.2	66.3	63.2	3.12	21.274		
1,000.0	996.1	997.9	997.1	2.1	1.8	174.78	0.7	18.8	81.7	78.2	3.48	23.439		
1,100.0	1,094.2	1,096.1	1,095.0	2.5	2.0	171.70	7.8	19.5	100.0	96.1	3.86	25.908		
1,200.0	1,191.7	1,193.8	1,192.5	2.9	2.2	169.76	14.8	20.2	121.1	116.8	4.24	28.551		
1,300.0	1,288.7	1,291.0	1,289.5	3.4	2.4	168.59	21.8	20.8	144.3	139.7	4.63	31.170		
1,400.0	1,385.7	1,388.2	1,386.4	3.8	2.6	167.79	28.8	21.5	167.9	162.8	5.03	33.371		
1,500.0	1,482.6	1,485.4	1,483.3	4.3	2.8	167.18	35.8	22.2	191.5	186.0	5.43	35.230		
1,600.0	1,579.6	1,582.5	1,580.2	4.7	3.0	166.71	42.7	22.8	215.1	209.2	5.84	36.819		
1,700.0	1,676.5	1,679.7	1,677.1	5.2	3.2	166.33	49.7	23.5	238.7	232.4	6.25	38.189		
1,800.0	1,773.5	1,776.8	1,774.0	5.6	3.4	166.01	56.7	24.2	262.3	255.6	6.66	39.382		
1,900.0	1,870.4	1,874.0	1,870.9	6.1	3.6	165.75	63.7	24.8	285.9	278.8	7.07	40.429		
2,000.0	1,967.4	1,971.2	1,967.8	6.6	3.8	165.53	70.7	25.5	309.5	302.1	7.49	41.355		
2,100.0	2,064.3	2,068.3	2,064.7	7.0	4.0	165.34	77.7	26.2	333.2	325.3	7.90	42.179		
2,200.0	2,161.3	2,165.5	2,161.6	7.5	4.2	165.18	84.6	26.9	356.8	348.5	8.31	42.917		
2,300.0	2,258.2	2,262.7	2,258.5	8.0	4.5	165.04	91.6	27.5	380.4	371.7	8.73	43.581		
2,400.0	2,355.2	2,359.8	2,355.4	8.4	4.7	164.91	98.6	28.2	404.1	394.9	9.15	44.182		
2,500.0	2,452.1	2,457.0	2,452.4	8.9	4.9	164.80	105.6	28.9	427.7	418.2	9.56	44.728		
2,600.0	2,549.1	2,554.1	2,549.3	9.4	5.1	164.70	112.6	29.5	451.4	441.4	9.98	45.227		
2,700.0	2,646.1	2,651.3	2,646.2	9.8	5.3	164.61	119.6	30.2	475.0	464.6	10.40	45.684		
2,800.0	2,743.0	2,748.5	2,743.1	10.3	5.5	164.52	126.5	30.9	498.7	487.9	10.82	46.104		
2,900.0	2,840.0	2,845.6	2,840.0	10.8	5.7	164.45	133.5	31.5	522.3	511.1	11.23	46.491		
3,000.0	2,936.9	2,942.8	2,936.9	11.2	5.9	164.38	140.5	32.2	546.0	534.3	11.65	46.850		
3,100.0	3,033.9	3,039.9	3,033.8	11.7	6.1	164.32	147.5	32.9	569.6	557.5	12.07	47.182		
3,200.0	3,130.8	3,137.1	3,130.7	12.2	6.3	164.26	154.5	33.5	593.3	580.8	12.49	47.496		
3,300.0	3,227.8	3,234.3	3,227.7	12.7	6.5	164.34	160.0	34.1	616.9	604.0	12.88	47.912		
3,400.0	3,324.7	3,331.4	3,324.8	13.1	6.7	164.64	163.2	34.4	640.6	627.3	13.22	48.458		
3,500.0	3,421.7	3,428.3	3,421.7	13.6	6.8	165.13	163.9	34.4	664.3	650.7	13.53	49.107		
3,600.0	3,518.6	3,525.2	3,518.6	14.1	7.0	165.66	163.9	34.4	688.0	674.2	13.83	49.747		
3,700.0	3,615.6	3,622.2	3,615.6	14.5	7.1	166.14	163.9	34.4	711.8	697.7	14.13	50.358		
3,800.0	3,712.5	3,719.2	3,712.5	15.0	7.3	166.60	163.9	34.4	735.7	721.2	14.44	50.942		
3,900.0	3,809.5	3,816.1	3,809.5	15.5	7.4	167.03	163.9	34.4	759.5	744.8	14.75	51.499		
4,000.0	3,906.4	3,913.1	3,906.4	15.9	7.6	167.43	163.9	34.4	783.5	768.4	15.06	52.031		
4,100.0	4,003.4	4,010.0	4,003.4	16.4	7.7	167.81	163.9	34.4	807.4	792.1	15.37	52.539		
4,200.0	4,100.3	4,107.0	4,100.3	16.9	7.9	168.16	163.9	34.4	831.4	815.7	15.68	53.025		
4,300.0	4,197.3	4,203.9	4,197.3	17.4	8.0	168.50	163.9	34.4	855.4	839.5	15.99	53.491		
4,400.0	4,294.2	4,300.9	4,294.2	17.8	8.2	168.82	163.9	34.4	879.5	863.2	16.31	53.936		
4,500.0	4,391.2	4,397.8	4,391.2	18.3	8.3	169.12	163.9	34.4	903.6	886.9	16.62	54.362		
4,600.0	4,488.2	4,494.8	4,488.2	18.8	8.5	169.40	163.9	34.4	927.7	910.7	16.94	54.771		
4,700.0	4,585.1	4,591.7	4,585.1	19.2	8.6	169.68	163.9	34.4	951.8	934.5	17.25	55.163		
4,800.0	4,682.1	4,688.7	4,682.1	19.7	8.8	169.93	163.9	34.4	975.9	958.3	17.57	55.539		
4,900.0	4,779.0	4,785.6	4,779.0	20.2	9.0	170.18	163.9	34.4	1,000.1	982.2	17.89	55.899		
5,000.0	4,876.0	4,882.6	4,876.0	20.7	9.1	170.41	163.9	34.4	1,024.2	1,006.0	18.21	56.246		
5,100.0	4,972.9	4,979.5	4,972.9	21.1	9.3	170.63	163.9	34.4	1,048.4	1,029.9	18.53	56.579		

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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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											NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-7D (Oxy I21 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)						
5,200.0	5,069.9	5,076.5	5,069.9	21.6	9.4	170.85	163.9	34.4	1,072.6	1,053.8	18.85	56.899				
5,300.0	5,166.8	5,173.4	5,166.8	22.1	9.6	171.05	163.9	34.4	1,096.8	1,077.7	19.17	57.207				

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-8D (Oxy I21 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	144.85	-12.0	8.5	14.7				
100.0	100.0	100.0	100.0	0.1	0.1	144.85	-12.0	8.5	14.7	14.4	0.30	49.549	
200.0	200.0	200.0	200.0	0.3	0.3	144.85	-12.0	8.5	14.7	14.1	0.65	22.766	
300.0	300.0	300.0	300.0	0.5	0.5	144.85	-12.0	8.5	14.7	13.7	0.99	14.778 CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	-148.42	-12.0	8.5	15.8	14.5	1.34	11.755	
500.0	499.9	499.9	499.9	0.9	0.8	-154.52	-12.0	8.5	19.3	17.6	1.69	11.368 SF	
600.0	599.7	600.1	600.1	1.1	1.0	-163.23	-10.7	8.4	24.5	22.4	2.04	11.987	
700.0	699.3	700.1	700.0	1.3	1.2	-173.76	-6.8	8.4	31.4	29.0	2.39	13.106	
800.0	798.6	799.9	799.5	1.5	1.4	176.20	-0.3	8.3	40.6	37.9	2.75	14.751	
900.0	897.5	899.0	898.3	1.8	1.6	168.58	8.0	8.2	52.9	49.7	3.14	16.863	
1,000.0	996.1	997.7	996.7	2.1	1.8	164.39	16.3	8.0	68.2	64.7	3.53	19.305	
1,100.0	1,094.2	1,096.0	1,094.7	2.5	2.0	162.24	24.6	7.9	86.2	82.2	3.94	21.884	
1,200.0	1,191.7	1,193.9	1,192.2	2.9	2.2	161.26	32.8	7.8	106.7	102.3	4.35	24.526	
1,300.0	1,288.7	1,291.3	1,289.3	3.4	2.4	160.95	41.0	7.7	129.2	124.5	4.77	27.101	
1,400.0	1,385.7	1,388.7	1,386.3	3.8	2.7	160.80	49.2	7.5	152.0	146.8	5.20	29.257	
1,500.0	1,482.6	1,486.0	1,483.3	4.3	2.9	160.68	57.4	7.4	174.8	169.2	5.63	31.066	
1,600.0	1,579.6	1,583.4	1,580.3	4.7	3.1	160.60	65.6	7.3	197.7	191.6	6.06	32.605	
1,700.0	1,676.5	1,680.8	1,677.3	5.2	3.3	160.53	73.7	7.2	220.5	214.0	6.50	33.928	
1,800.0	1,773.5	1,778.1	1,774.4	5.6	3.5	160.48	81.9	7.0	243.3	236.3	6.94	35.077	
1,900.0	1,870.4	1,875.5	1,871.4	6.1	3.7	160.43	90.1	6.9	266.1	258.7	7.37	36.082	
2,000.0	1,967.4	1,972.9	1,968.4	6.6	4.0	160.39	98.3	6.8	288.9	281.1	7.81	36.970	
2,100.0	2,064.3	2,070.2	2,065.4	7.0	4.2	160.36	106.5	6.7	311.7	303.5	8.26	37.758	
2,200.0	2,161.3	2,167.6	2,162.4	7.5	4.4	160.33	114.7	6.5	334.5	325.8	8.70	38.464	
2,300.0	2,258.2	2,264.9	2,259.5	8.0	4.6	160.30	122.9	6.4	357.3	348.2	9.14	39.098	
2,400.0	2,355.2	2,362.3	2,356.5	8.4	4.8	160.28	131.0	6.3	380.1	370.6	9.58	39.671	
2,500.0	2,452.1	2,459.7	2,453.5	8.9	5.1	160.26	139.2	6.2	403.0	392.9	10.03	40.192	
2,600.0	2,549.1	2,557.0	2,550.5	9.4	5.3	160.25	147.4	6.1	425.8	415.3	10.47	40.667	
2,700.0	2,646.1	2,654.4	2,647.5	9.8	5.5	160.23	155.6	5.9	448.6	437.7	10.91	41.101	
2,800.0	2,743.0	2,751.8	2,744.5	10.3	5.7	160.22	163.8	5.8	471.4	460.0	11.36	41.501	
2,900.0	2,840.0	2,849.1	2,841.6	10.8	5.9	160.20	172.0	5.7	494.2	482.4	11.80	41.869	
3,000.0	2,936.9	2,946.5	2,938.6	11.2	6.2	160.19	180.1	5.6	517.0	504.8	12.25	42.210	
3,100.0	3,033.9	3,043.9	3,035.6	11.7	6.4	160.18	188.3	5.4	539.8	527.1	12.69	42.526	
3,200.0	3,130.8	3,141.2	3,132.6	12.2	6.6	160.17	196.5	5.3	562.6	549.5	13.14	42.820	
3,300.0	3,227.8	3,238.6	3,229.6	12.7	6.8	160.16	204.7	5.2	585.5	571.9	13.59	43.094	
3,400.0	3,324.7	3,335.9	3,326.7	13.1	7.0	160.15	212.9	5.1	608.3	594.2	14.03	43.350	
3,500.0	3,421.7	3,433.3	3,423.7	13.6	7.3	160.15	221.1	4.9	631.1	616.6	14.48	43.590	
3,600.0	3,518.6	3,530.7	3,520.7	14.1	7.5	160.14	229.3	4.8	653.9	639.0	14.92	43.815	
3,700.0	3,615.6	3,628.0	3,617.7	14.5	7.7	160.13	237.4	4.7	676.7	661.3	15.37	44.026	
3,800.0	3,712.5	3,725.4	3,714.7	15.0	7.9	160.13	245.6	4.6	699.5	683.7	15.82	44.225	
3,900.0	3,809.5	3,822.8	3,811.8	15.5	8.1	160.12	253.8	4.4	722.3	706.1	16.26	44.413	
4,000.0	3,906.4	3,920.1	3,908.8	15.9	8.4	160.11	262.0	4.3	745.1	728.4	16.71	44.591	
4,100.0	4,003.4	4,017.5	4,005.8	16.4	8.6	160.11	270.2	4.2	768.0	750.8	17.16	44.759	
4,200.0	4,100.3	4,114.8	4,102.8	16.9	8.8	160.10	278.4	4.1	790.8	773.2	17.60	44.919	
4,300.0	4,197.3	4,212.2	4,199.8	17.4	9.0	160.10	286.6	3.9	813.6	795.5	18.05	45.070	
4,400.0	4,294.2	4,309.6	4,296.8	17.8	9.3	160.10	294.7	3.8	836.4	817.9	18.50	45.214	
4,500.0	4,391.2	4,406.9	4,393.9	18.3	9.5	160.09	302.9	3.7	859.2	840.3	18.95	45.351	
4,600.0	4,488.2	4,504.3	4,490.9	18.8	9.7	160.09	311.1	3.6	882.0	862.6	19.39	45.481	
4,700.0	4,585.1	4,601.7	4,587.9	19.2	9.9	160.08	319.3	3.4	904.8	885.0	19.84	45.606	
4,800.0	4,682.1	4,699.0	4,684.9	19.7	10.1	160.08	327.5	3.3	927.6	907.4	20.29	45.725	
4,900.0	4,779.0	4,796.4	4,781.9	20.2	10.4	160.08	335.7	3.2	950.5	929.7	20.73	45.838	
5,000.0	4,876.0	4,893.8	4,879.0	20.7	10.6	160.07	343.9	3.1	973.3	952.1	21.18	45.947	
5,100.0	4,972.9	4,991.1	4,976.0	21.1	10.8	160.07	352.0	3.0	996.1	974.4	21.63	46.051	

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 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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													NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-8D (Oxy I21 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)								
5,200.0	5,069.9	5,088.5	5,073.0	21.6	11.0	160.07	360.2	2.8	1,018.9	996.8	22.08	46.151						
5,300.0	5,166.8	5,185.8	5,170.0	22.1	11.2	160.07	368.4	2.7	1,041.7	1,019.2	22.52	46.247						
5,400.0	5,263.8	5,283.2	5,267.0	22.5	11.5	160.06	376.6	2.6	1,064.5	1,041.5	22.97	46.338						
5,500.0	5,360.7	5,380.6	5,364.0	23.0	11.7	160.06	384.8	2.5	1,087.3	1,063.9	23.42	46.427						
5,600.0	5,457.7	5,477.9	5,461.1	23.5	11.9	160.06	393.0	2.3	1,110.1	1,086.3	23.87	46.512						

Directional Plus

Anticollision Report

Company:	Berry Petroleum Company (NAD 83)	Local Co-ordinate Reference:	Well Oxy 21-16D (Oxy I21 Pad)
Project:	Garfield County	TVD Reference:	KBE @ 8381.0ft (Original Well Elev)
Reference Site:	NESE S21-T6S-R97W (Oxy I21 pad)	MD Reference:	KBE @ 8381.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Oxy 21-16D (Oxy I21 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 NESE S21-T6S-R97W (Oxy I21 pad) - Oxy 21-9D (Oxy I21 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	152.41	-92.9	48.5	104.8					
100.0	100.0	100.0	100.0	0.1	0.1	152.41	-92.9	48.5	104.8	104.5	0.30	353.199		
200.0	200.0	200.0	200.0	0.3	0.3	152.41	-92.9	48.5	104.8	104.2	0.65	162.281 CC, ES		
300.0	300.0	299.0	299.0	0.5	0.5	153.06	-93.9	47.7	105.3	104.3	0.99	106.020		
400.0	400.0	397.8	397.7	0.7	0.7	-136.09	-96.8	45.2	107.8	106.4	1.35	79.707		
500.0	499.9	496.4	496.1	0.9	0.9	-134.44	-101.6	41.0	113.3	111.5	1.73	65.614		
600.0	599.7	594.7	594.0	1.1	1.1	-132.72	-108.3	35.3	121.8	119.6	2.13	57.284		
700.0	699.3	692.4	691.1	1.3	1.4	-131.07	-116.9	27.9	133.3	130.7	2.56	52.091		
800.0	798.6	789.5	787.2	1.5	1.6	-129.55	-127.3	19.0	147.8	144.8	3.03	48.741		
900.0	897.5	885.9	882.3	1.8	2.0	-128.20	-139.5	8.5	165.3	161.8	3.55	46.525		
1,000.0	996.1	981.5	976.0	2.1	2.3	-127.04	-153.3	-3.4	185.8	181.6	4.13	45.029		
1,100.0	1,094.2	1,076.1	1,068.4	2.5	2.7	-126.03	-168.8	-16.6	209.1	204.3	4.75	44.002		
1,200.0	1,191.7	1,169.6	1,159.2	2.9	3.1	-125.16	-185.8	-31.2	235.2	229.7	5.43	43.288		
1,300.0	1,288.7	1,262.1	1,248.4	3.4	3.6	-124.54	-204.2	-47.0	263.8	257.6	6.16	42.806		
1,400.0	1,385.7	1,353.6	1,336.2	3.8	4.1	-123.84	-224.1	-64.1	293.9	287.0	6.93	42.417		
1,500.0	1,482.6	1,444.2	1,422.3	4.3	4.6	-122.94	-245.3	-82.3	325.3	317.6	7.72	42.136		
1,600.0	1,579.6	1,533.8	1,506.9	4.7	5.1	-121.91	-267.8	-101.6	358.2	349.6	8.54	41.961		
1,700.0	1,676.5	1,622.2	1,589.6	5.2	5.7	-120.81	-291.5	-122.0	392.4	383.0	9.37	41.890 SF		
1,800.0	1,773.5	1,709.5	1,670.5	5.6	6.3	-119.65	-316.3	-143.2	428.1	417.9	10.21	41.925		
1,900.0	1,870.4	1,799.3	1,753.1	6.1	6.9	-118.47	-343.0	-166.2	465.1	454.0	11.07	41.995		
2,000.0	1,967.4	1,891.7	1,838.1	6.6	7.6	-117.40	-370.6	-189.9	502.4	490.4	11.95	42.040		
2,100.0	2,064.3	1,984.1	1,923.0	7.0	8.3	-116.49	-398.2	-213.6	539.8	526.9	12.82	42.095		
2,200.0	2,161.3	2,076.6	2,008.0	7.5	8.9	-115.69	-425.9	-237.3	577.3	563.6	13.69	42.156		
2,300.0	2,258.2	2,169.0	2,092.9	8.0	9.6	-114.98	-453.5	-261.0	614.8	600.3	14.56	42.219		
2,400.0	2,355.2	2,261.4	2,177.8	8.4	10.2	-114.36	-481.1	-284.8	652.5	637.1	15.43	42.283		
2,500.0	2,452.1	2,353.8	2,262.8	8.9	10.9	-113.81	-508.8	-308.5	690.2	673.9	16.30	42.347		
2,600.0	2,549.1	2,446.2	2,347.7	9.4	11.6	-113.31	-536.4	-332.2	728.0	710.8	17.17	42.409		
2,700.0	2,646.1	2,538.7	2,432.7	9.8	12.3	-112.86	-564.0	-355.9	765.8	747.8	18.03	42.470		
2,800.0	2,743.0	2,631.1	2,517.6	10.3	12.9	-112.46	-591.7	-379.6	803.6	784.7	18.90	42.529		
2,900.0	2,840.0	2,723.5	2,602.6	10.8	13.6	-112.09	-619.3	-403.4	841.5	821.8	19.76	42.586		
3,000.0	2,936.9	2,815.9	2,687.5	11.2	14.3	-111.75	-646.9	-427.1	879.4	858.8	20.62	42.641		
3,100.0	3,033.9	2,908.3	2,772.4	11.7	14.9	-111.44	-674.5	-450.8	917.4	895.9	21.49	42.693		
3,200.0	3,130.8	3,000.7	2,857.4	12.2	15.6	-111.16	-702.2	-474.5	955.3	933.0	22.35	42.744		
3,300.0	3,227.8	3,093.2	2,942.3	12.7	16.3	-110.89	-729.8	-498.2	993.3	970.1	23.21	42.792		
3,400.0	3,324.7	3,185.6	3,027.3	13.1	17.0	-110.65	-757.4	-522.0	1,031.3	1,007.2	24.07	42.838		
3,500.0	3,421.7	3,278.0	3,112.2	13.6	17.6	-110.42	-785.1	-545.7	1,069.3	1,044.3	24.93	42.882		
3,600.0	3,518.6	3,370.4	3,197.1	14.1	18.3	-110.21	-812.7	-569.4	1,107.3	1,081.5	25.80	42.924		

Directional Plus

Anticollision Report

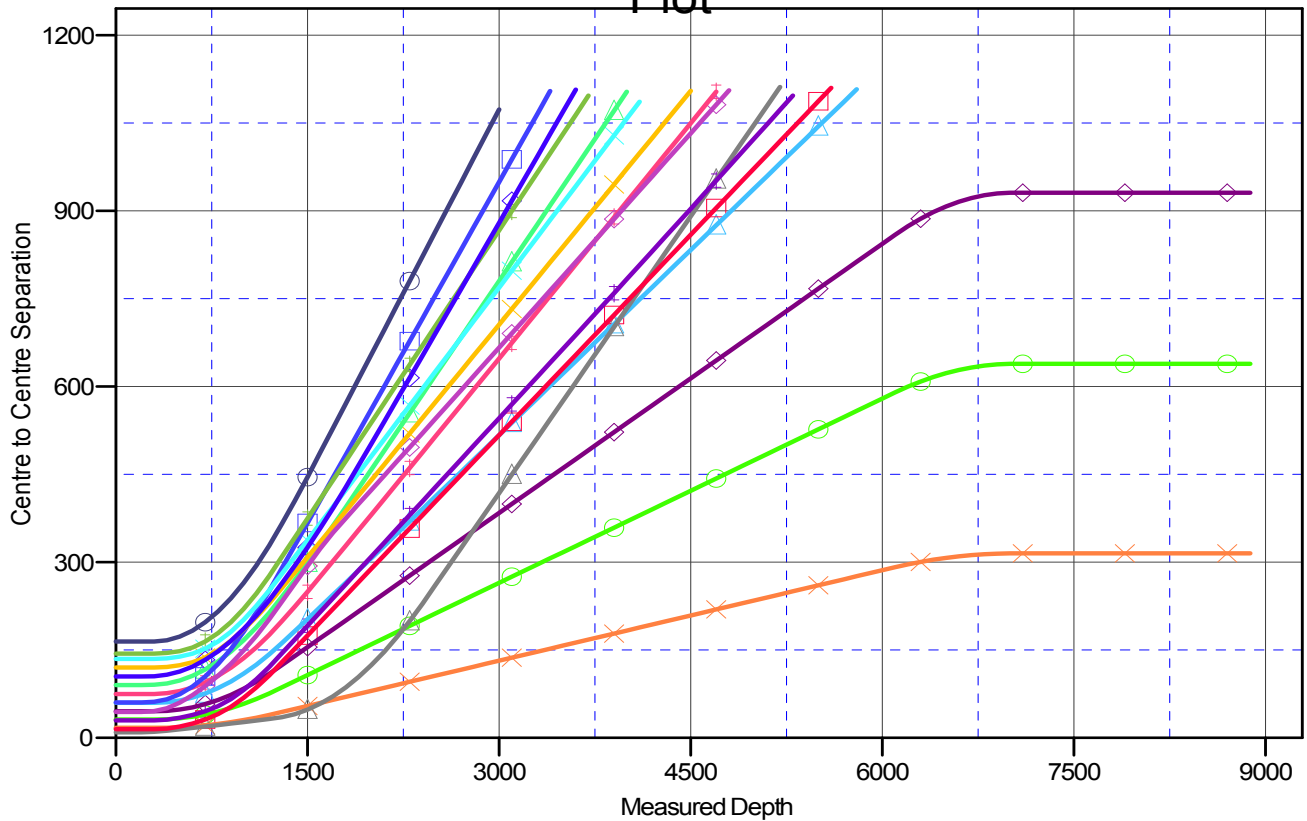
Company: Berry Petroleum Company (NAD 83)
Project: Garfield County
Reference Site: NESE S21-T6S-R97W (Oxy I21 pad)
Site Error: 0.0ft
Reference Well: Oxy 21-16D (Oxy I21 Pad)
Well Error: 0.0ft
Reference Wellbore: DD
Reference Design: Plan #1

Local Co-ordinate Reference: Well Oxy 21-16D (Oxy I21 Pad)
TVD Reference: KBE @ 8381.0ft (Original Well Elev)
MD Reference: KBE @ 8381.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 2003.21 US Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KBE @ 8381.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Oxy 21-16D (Oxy I21 Pad)
 Coordinate System is US State Plane 1983, Colorado Central Zone
 Grid Convergence at Surface is: -1.71°

Ladder Plot



LEGEND

- Oxy 21-10D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-11D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-12D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-13D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-14D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-15D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-17D (Oxy I21 pad), DD, Plan #1 V0
- Oxy 21-2D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-3D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-4D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-5D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-6D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-7D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-8D (Oxy I21 Pad), DD, Plan #1 V0
- Oxy 21-9D (Oxy I21 Pad), DD, Plan #1 V0